

A study on the Knowledge and Perceptions of Indoor Air Pollution Amongst the Youth in Jammu Region.

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Abstract

This study was aimed to access the knowledge, attitude and perception of the youth of Jammu region about Indoor Air Pollution. A survey was done with the help of an online Open-End Questionnaire. Youth of different age group were included in this survey; youth of the age of 16-31 were included in our analysis. Education status of the respondents was postgraduate, undergraduate and 12th grade students. Regarding parents occupation of the youth there were farmers, businessman, shopkeepers, labor class, professors, housewives, policeman, and bank employees. Therefore the parents of the respondents were from diverse status and so their income also varied according to the professions. Participants completed and submitted the online questionnaire, while going through the data it was concluded that the maximum youth of Jammu region are aware about the Indoor Air Pollution and regarding its ill effects on the health. Females are the most suffered class from the Indoor Air Pollution, as they spent maximum time of their lives in confined kitchen. The second class to get effected from the Indoor Air Pollution is the children as they spend most of the time with their mothers. It is the right time for these youth to get well versed regarding this Indoor Air Pollution and they should also start awareness programmes regarding this.

Key words: Indoor air pollution, Qualitative Research Survey, Jammu.

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I. Introduction

Clean air is the most basic requirement of all human beings. The major concern in the developing country like India is the problem of air pollution. Common masses are generally aware of much discussed outdoor air pollution. Very less percentage of population is familiar with the problems related to indoor air pollution. Indoor air quality (IAQ) varies from place to place depending upon the nature of activities and chores carried within that particular indoor environment. More than 900 contaminants has been recognized by the researchers that contribute to indoor air pollution (Brooks, B.O. and David, F.W.,1992).It is the right time to ponder over the problem of indoor air quality so that it can be mitigated to some extent.

Being responsible inhabitants, we have to understand that indoor air pollution is the sum total of physical, biological and chemical contaminants generated in our indoor environment which ultimately affects the health of the inmates. It is a well established fact that 70-90% of people spend their time in confined spaces like homes and offices (Nazaroff and Goldstein, 2015), therefore, people are more exposed to pollution being indoors rather than outdoors.

The worst affected population by Indoor Air Pollution in rural areas is women and children. The age old practice of cooking using earthen chulhas and traditional stoves with wood, cow dung cakes and kerosene in poorly ventilated kitchens has an adverse effect on the health of women and children as they are confined to live in the same room as well. (Bruce et al, 2000, Smith, 2000).

Out of the total population of India that uses fuel for cooking; 49% use firewood, 8.9% use cow dung cake, 1.5% use coal, 2.9% use kerosene, 28.6% use LPG, 0.1% use electricity, 0.4% use biogas and 0.5% use other alternative means (House listing and housing census data highlights, 2011). Long term exposure to smoke from burning of solid fuels is the major cause of respiratory infections like asthma, COPD, cancer of lungs, TB and eye related problems like cataract and even blindness (Smith, 2000; Bruce et al. 2000; Ezzati and Kammen, 2001).

For good health and longevity the utmost requirement is the pollution free indoor environment.

The aim of this study was to assess the knowledge, attitudes, and perceptions of air pollution among youth in Jammu region (J&K), India. The study employed a cross-sectional design to obtain quantitative data

form 138 respondents in different age groups ranging from 12-36 years, and the results were analysed and statistically described

II. Materials And Methods

Qualitative research was done based on a survey conducted for 138 youth between different age groups. A questionnaire, imported on Google Forms, was provided to the youth of Jammu region and the responses were generated.

The questionnaire of our study ensured comprehensibility, clarity of wording, and reliability as a study tool.

The primary outcome was a composite measure of the levels of the knowledge and attitudes about the adverse health effects of biomass smoke exposure and other related aspects of indoor air pollution.

Categorical data were presented as frequency tables while inferential analysis was done by regression analysis. The level of statistical significance was set at $P < 0.05$.

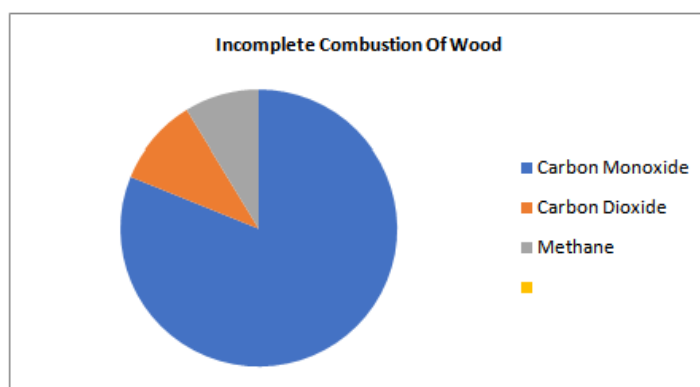
DATA COLLECTION

Both primary and secondary data were collected which includes a questionnaire filled by youth, journals and books.

III. Data Analysis

1. Incomplete Combustion of Wood

Maximum youth are of the opinion that 85.5% of carbonmonoxide is produced by incomplete combustion of wood followed by carbon dioxide i.e. 10.7% and at the last is methane gas i.e. 9.2%.

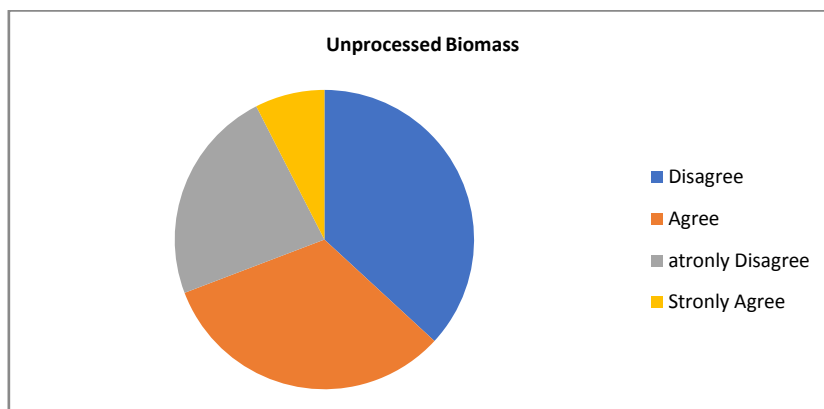


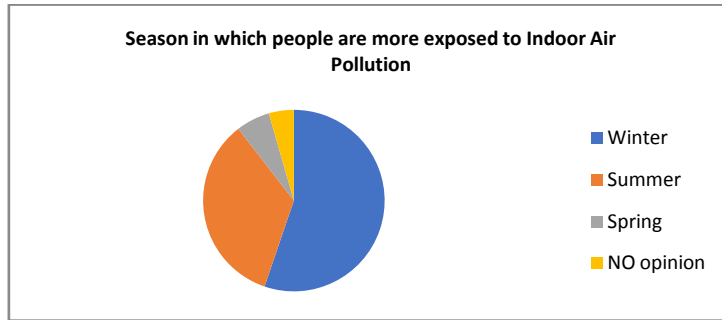
2. Effect of unprocessed biomass on environment as well as human health

About 37.7% youth disagree with the fact that unprocessed biomass has effect on environment as well as on human health.23.8% strongly disagree , 33.1% agree and 77.7% strongly agree.

3. Season in which people are more exposed indoor air pollution

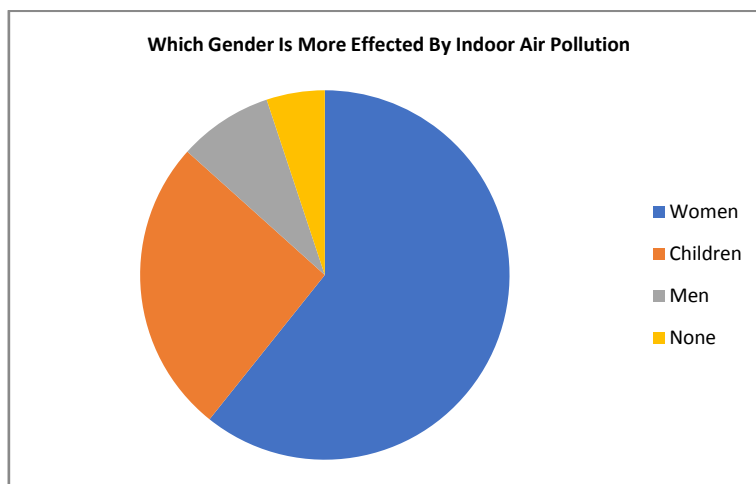
This survey revealed that the people are more exposed to indoor air pollution in winter season i.e. 58.3% followed by summer i.e. 36.2% than in spring i.e. 6.35%. 4.7% youth don't have any opinion regarding this.





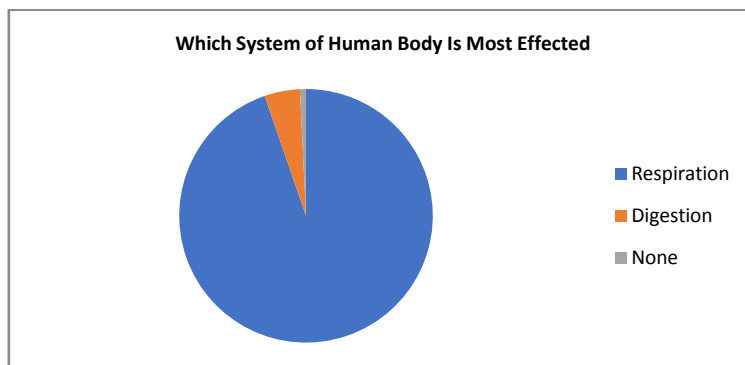
4. Which Gender Is More Effectuated

After having surveyed it was found that 75% of womenfolk is exposed to indoor air pollution, 32% children, 10.2% men folk. 6.3% don't have any opinion about that.



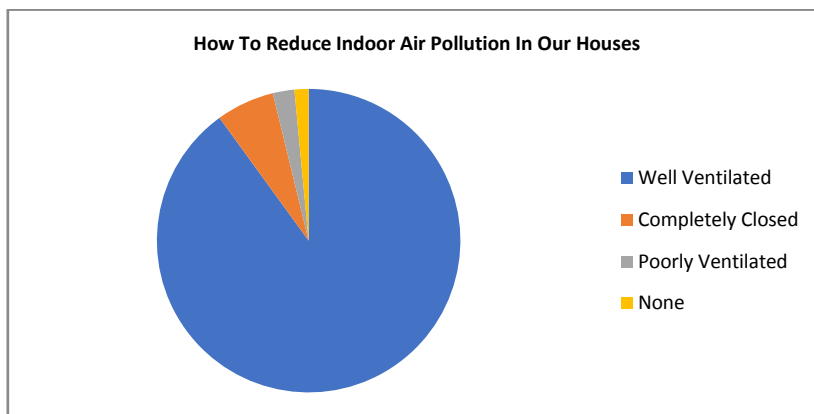
5. Which System Of Human Body Is Most Effectuated By Indoor Air Pollution

It was found that about 98.4% of youth thinks that Respiratory system is affected by indoor air pollution, 4.7% thinks it causes Digestion problem and 0.8% thinks nothing is affected.



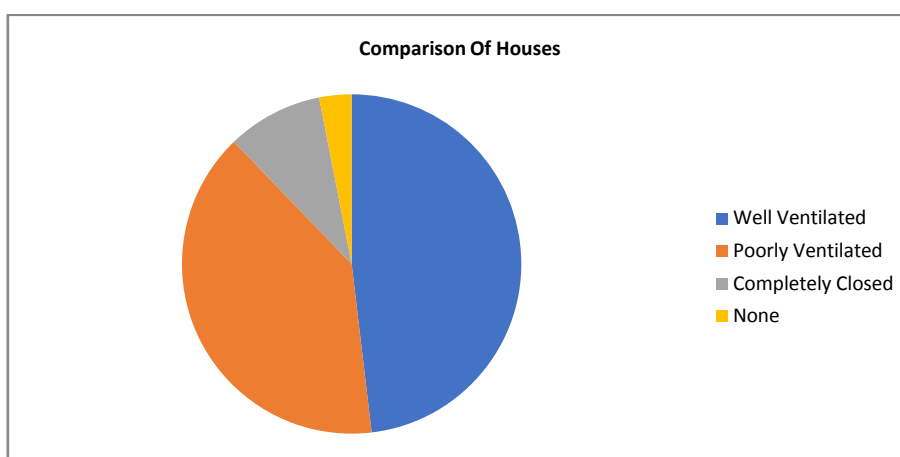
6. How To Reduce Indoor Air Pollution In Our Houses

According to the survey it was found that 90% of the youth are of the opinion that well ventilated houses can reduce indoor air pollution, followed by 6.2% that feels completely closed houses are better, 2.3% are with poorly ventilated and 1.5% have no opinion.



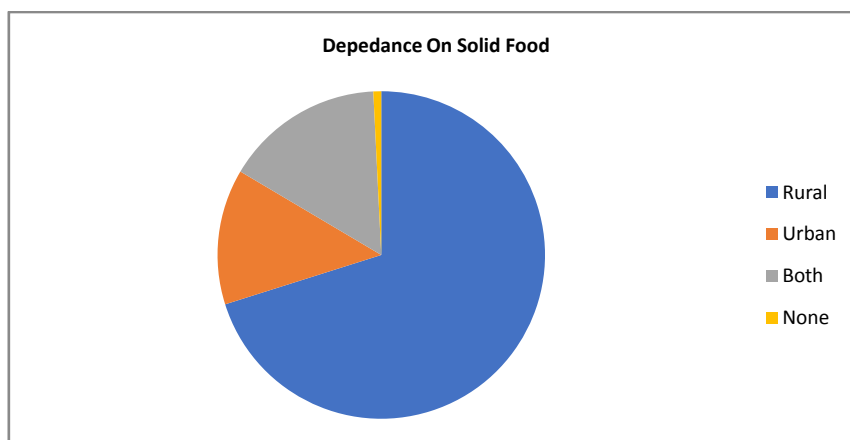
7. Comparison Of Houses

48.5% of the youth are of the opinion that in rural areas the houses are well ventilated, they have open space and air is also fresh. 40% youth believe that they are poorly ventilated and 9.2% goes with completely closed houses and 3.1% have no opinion.



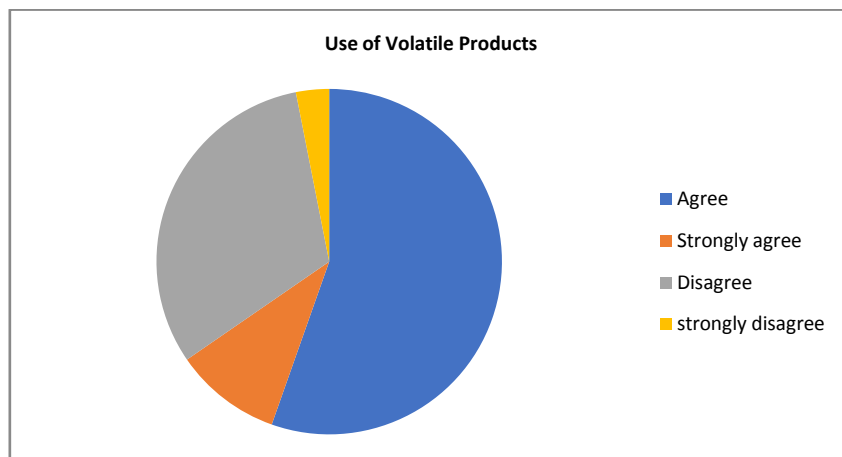
8. Dependence On Solid Fuel

After survey it was found that 72.3% people are dependant on solid fuel in rural households, 13.8% urban households, 16.2% are of the opinion that both rural household and urban households are dependant on solid fuel and 0.85 have no opinion.



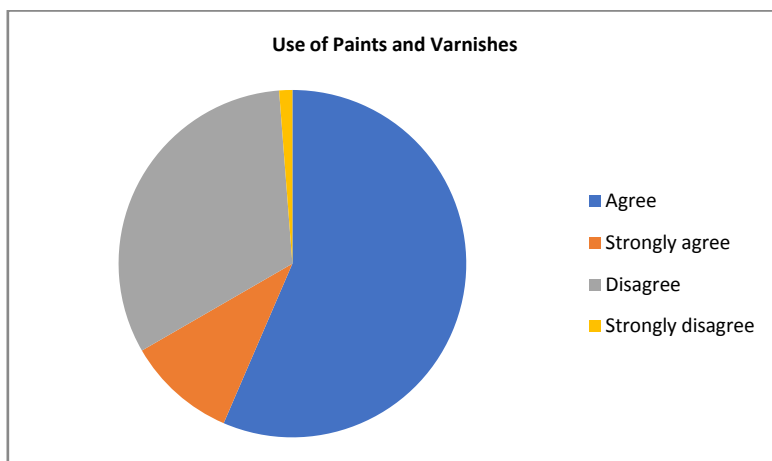
9. Use of volatile products

Maximum of 63.1% youth agree that the usage of sprays, insecticides, perfumes etc. have an impact on the quality of indoor air, 31.5 strongly agree, 6.9% disagree and 1.5 strongly disagree.



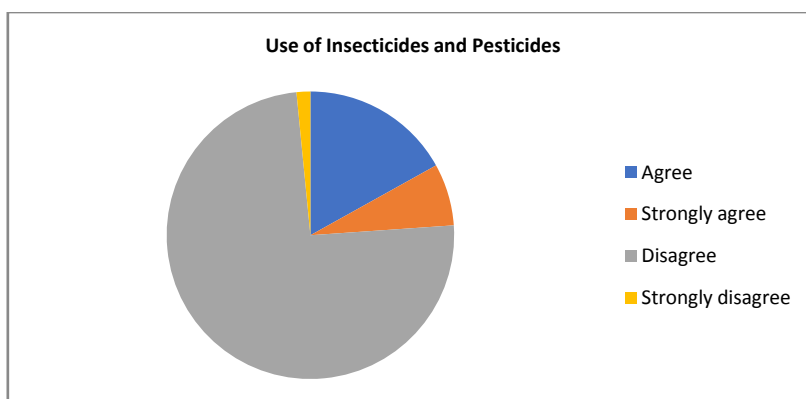
10. Use of paints and Varnishes

Paints and varnishes are highly volatile organic compounds. We should leave our houses for at least two to three days after paints. Our survey revealed that about 55.45 youth are of the opinion that paints and varnishes adds to the indoor air pollution, 10% strongly agree, 31.5% disagree and 3.1 strongly disagree.



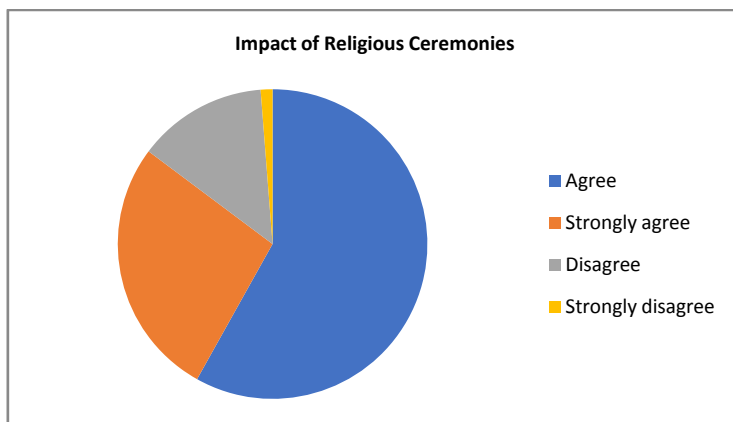
11. Use of Insecticides and Pesticides

Most of the youth do not recommend insecticides and pesticides to be used in our houses i.e. 57.7%, 26.2% strongly disagree, 13.1% agree and 5.4% strongly agree.



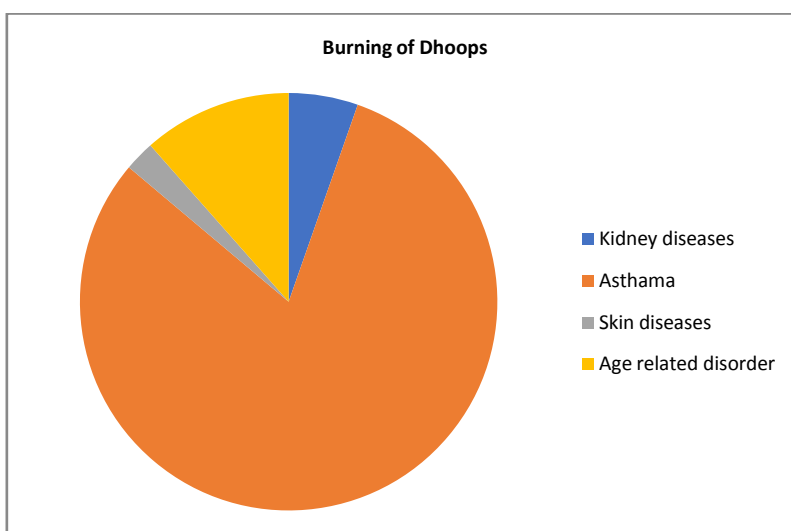
12. Impact of Religious Ceremonies

In our country religious ceremonies are being practiced that releases smoke. Hawansamagree and incense sticks are used. About 56.6% of youth agree that they add to indoor air pollution, 26.4% strongly agree, 30.2% disagree and 15.4 strongly agree.



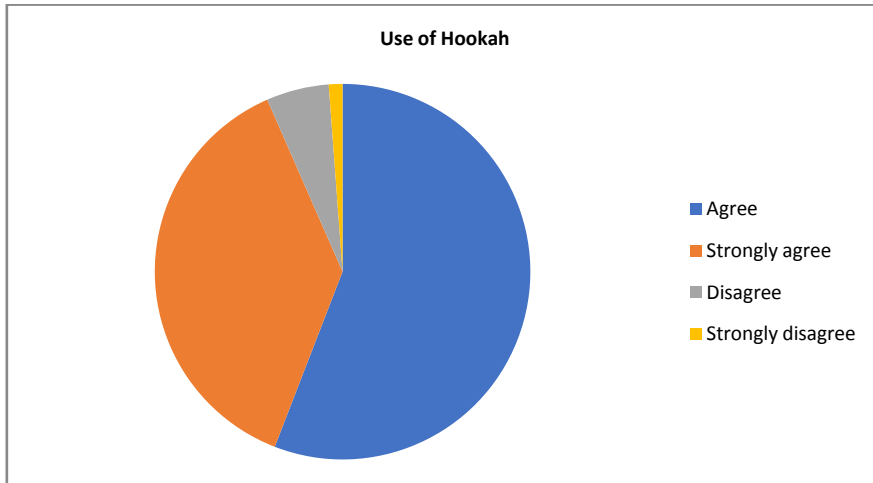
13. Burning of Dhoops

82.7% youth feel that burning of Dhoops at our homes causes Asthma, 11.8% feel that they causes age related disorders, 5.5% relate it to kidney diseases and 2.4% relate it to skin diseases.



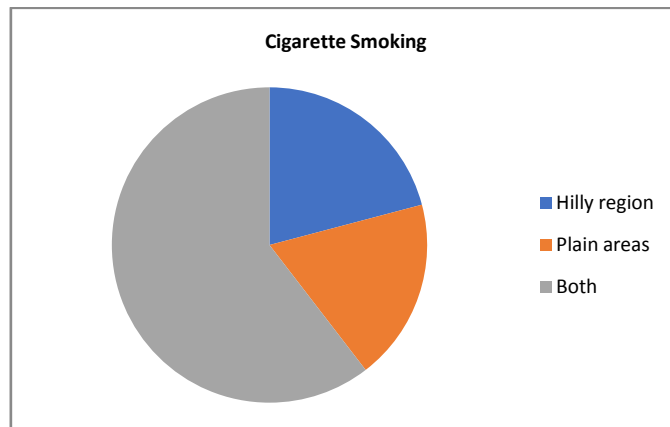
14. Use of Hookah

Hookah is most prevalent in hilly regions and 57% youth agree with this, 38.3 strongly agree, 5.5 disagree and 1.6 strongly disagree.



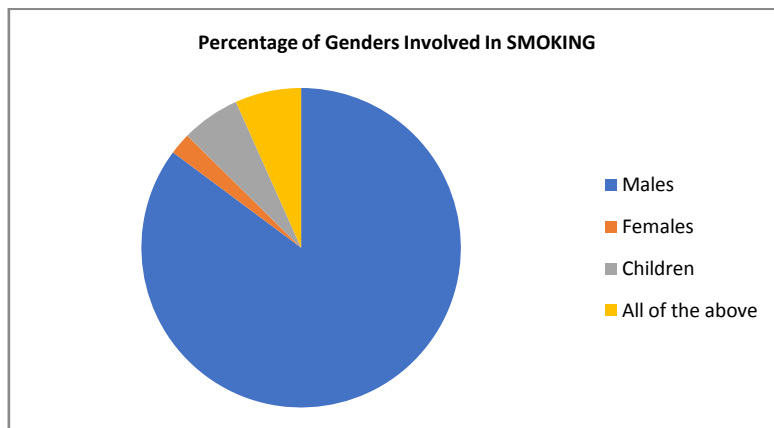
15. Cigarette Smoking

As we know cigarette smoking is injurious to health but, it is prevalent in both hilly and plains of hilly regions and plains of UT of Jammu and Kashmir ,responses goes upto 62.8%, for hilly regions it is 21.7% and for plain areas 19.4%.



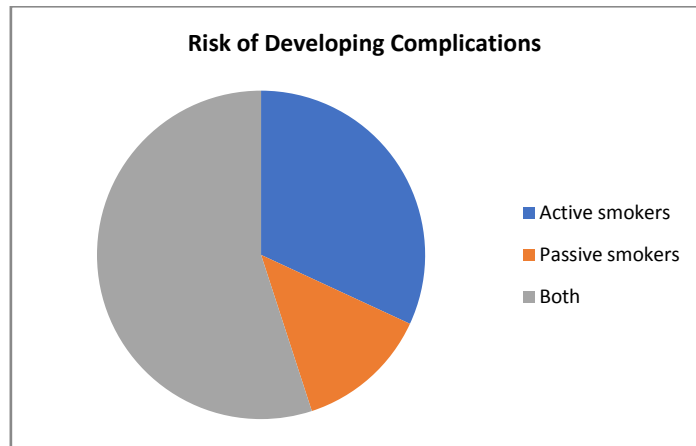
16. Gender Involved In Smoking

According to the survey 89.1% youth are of the opinion that male members are more involved in smoking, followed by children that are 6.2%, followed by females that is 2.3%. The youth also feel that a sum total of 7% of all the genders are involved in smoking.



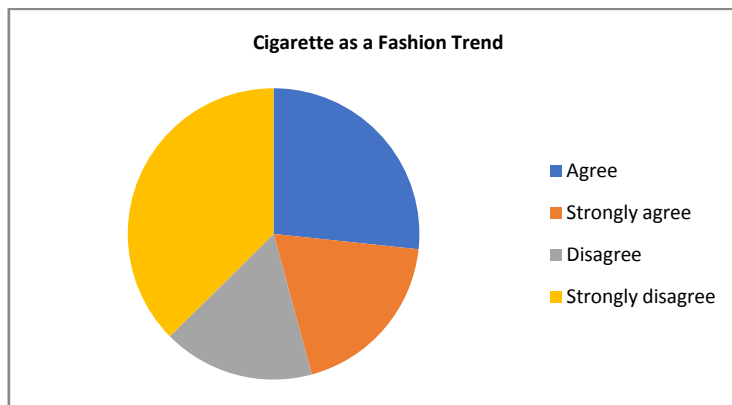
17. Risk Of Developing Complications

Both active as well as passive smokers are at the risk of developing respiratory problems. 55.8% youth feels that the risk is higher for both the smokers,34.1% goes with active smokers and 14% with passive smokers.



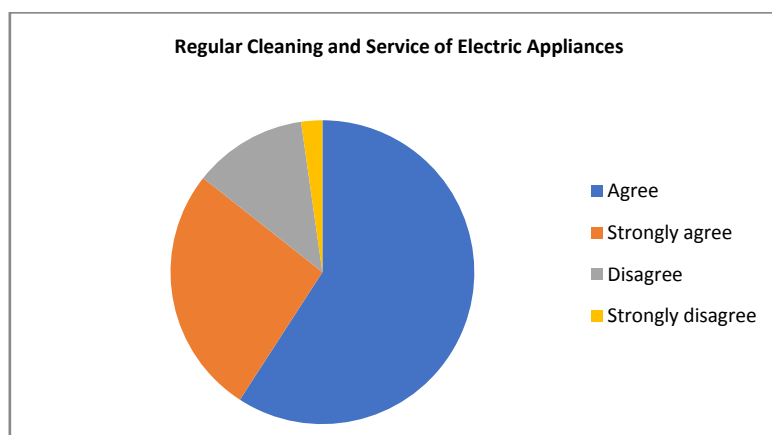
18. Cigarette asa Fashion Trend

A high percentage of youth that is 38% strongly disagree that cigarette smoking is a fashion trend, 24.7% agree while 19.4% strongly agree and 17.1% disagree after being surveyed.



19. Regular Cleaning And Service Of Electric Appliances

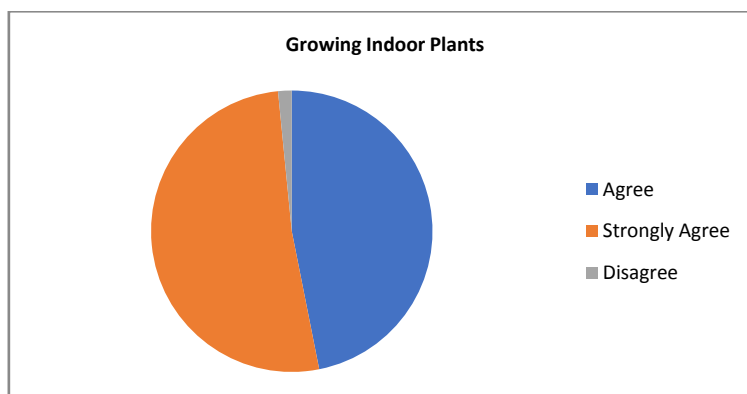
According to the survey 60.5% youth agree with the fact that regular cleaning of electrical appliances reduces Indoor Air Pollution,27.1% strongly agree ,12.4% disagree and 2.3% strongly disagree.



20. Growing Indoor Plants

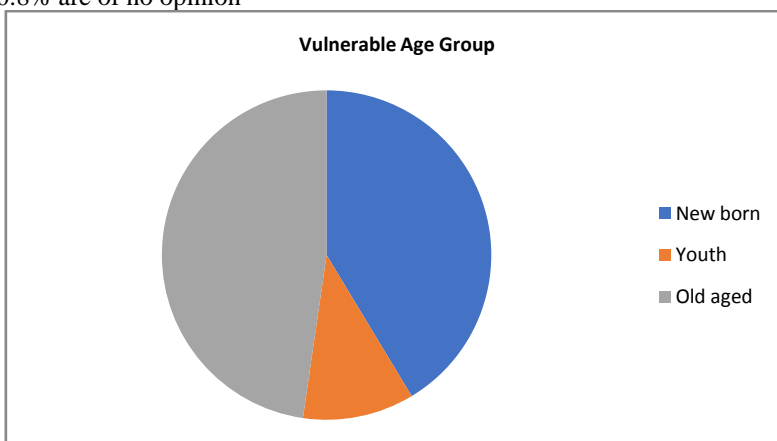
Growing indoor plants in the confined area reduces indoor air pollution.

After surveying it was found that 52.8% strongly agree with the fact, 48% agree and 1.6% disagree



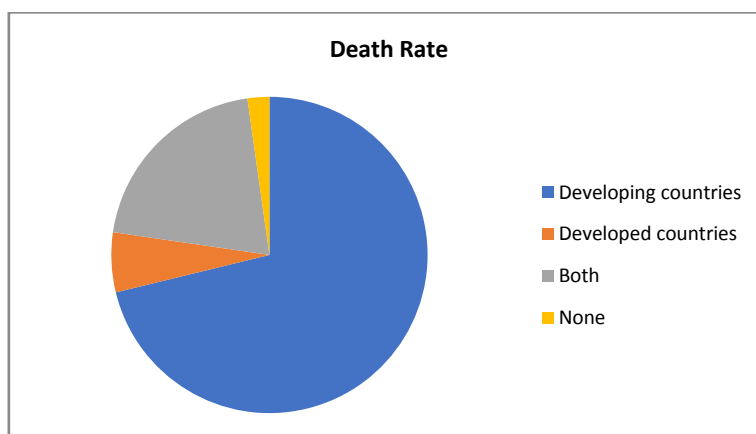
21. Vulnerable Age Group

According to the survey 65.4% of old people are more affected by indoor air pollution, 56.7% new born and 15% youth. While 0.8% are of no opinion



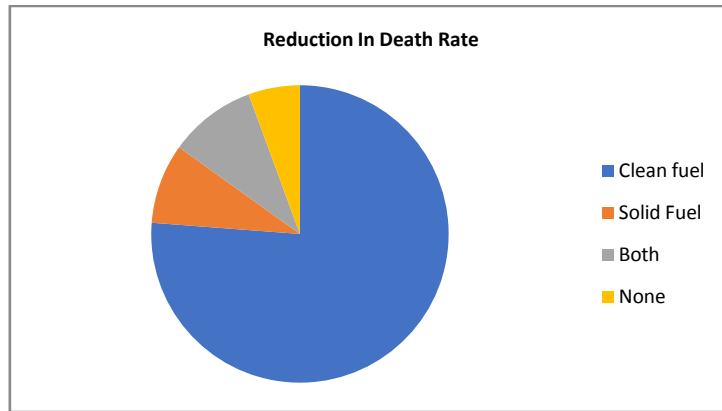
21. Death Rate

Mortality is about 73.4% in developing countries and as low as 6.3% in the developed countries. Analysis of this survey report also shows that 21.1% mortality is both in developed and developing countries while 2.3% are of no opinion.



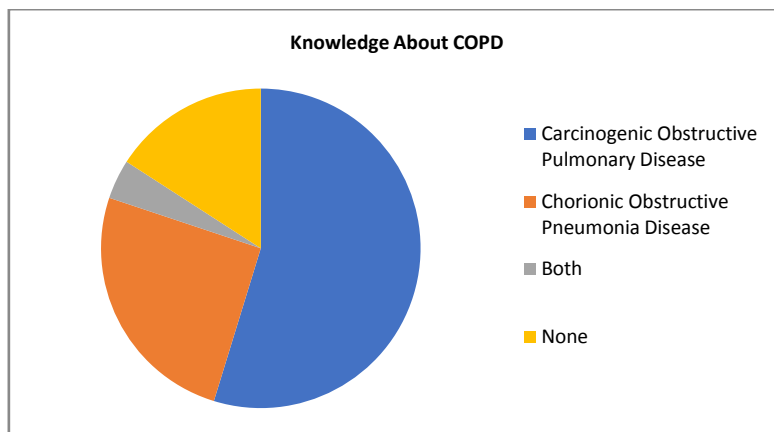
23. ReductionOf Death Rate

It was concluded from the survey that 76.2% of youth felt that using clean fuel can reduce the death rate, 8.7% youth feels that by using solid fuel death rate can be reduced and 9.5% agrees with both while 5.6% are of no opinion.



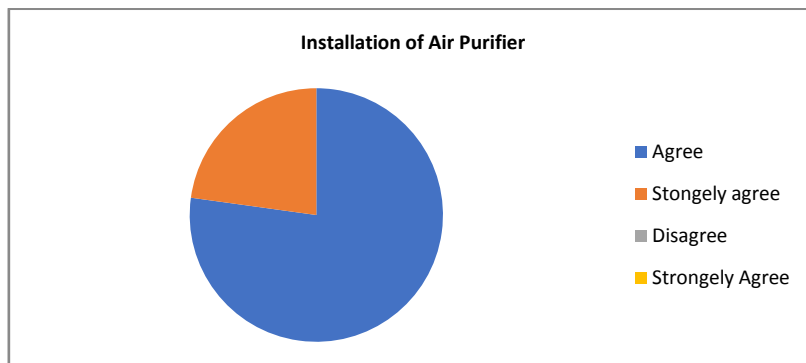
24. Knowledge About COPD

According to the survey 54.8% of youth were aware of the term COPD that is Carcinogenic Obstructive Pulmonary Disease,25.4% are of the opinion that it is Chorionic Obstructive Pneumonia Disease and 4% goes with both whereas 15.9% have no opinion.



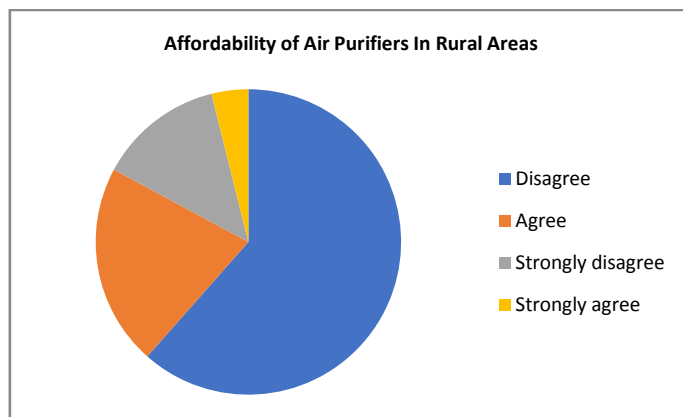
25. Installation Of Air Purifier

77.8% feel that installation of air purifiers helps to reduce the level of indoor air pollution.23% strongly agree with this statement.



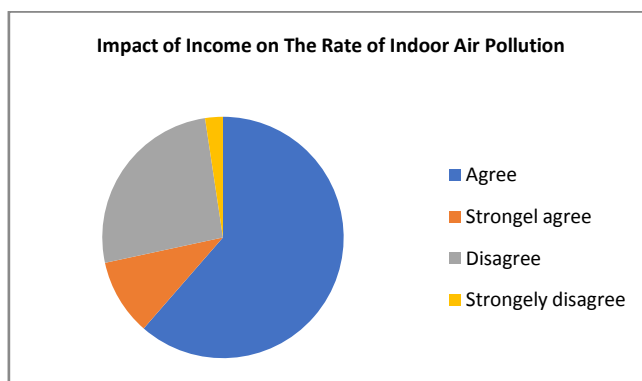
26. Affordability Of Air Purifiers In Rural Areas

A high percentage of youth that is 61.7% are of the opinion that people living in rural areas cannot afford air purifiers as it is not possible for them to purchase. 21.4% agree with the statement that they can purchase this while 13.3% strongly disagree and 3.9% strongly agree with this statement.



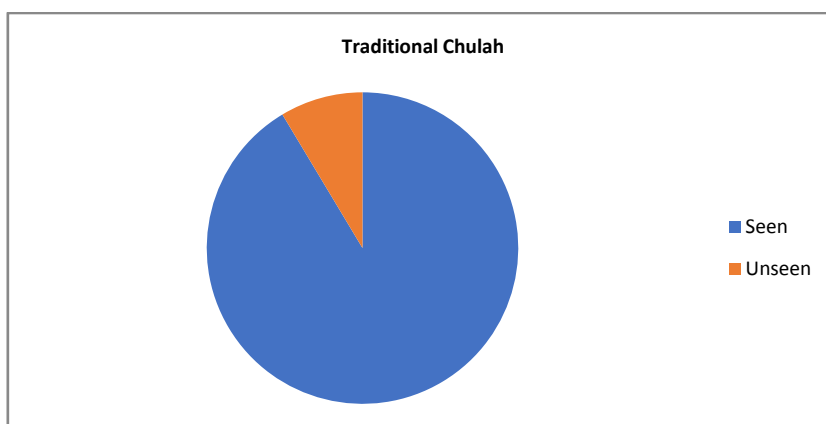
27. Impact Of Income On The Rate Of Indoor Air Pollution

According to the survey conducted 61.9% youth feels that annual income has an effect on the rate of indoor air pollution, 10.3% strongly agree with this, 26.2% disagree with this and 2.4% strongly disagree with it.



28. Traditional Chulah

Traditional Chulah has been used in many rural areas of our country. According to the suvey, it was analysis that 91.4% of the youth has seen traditional chulah in their rural areas and 8.6% of youth has not seen it yet.



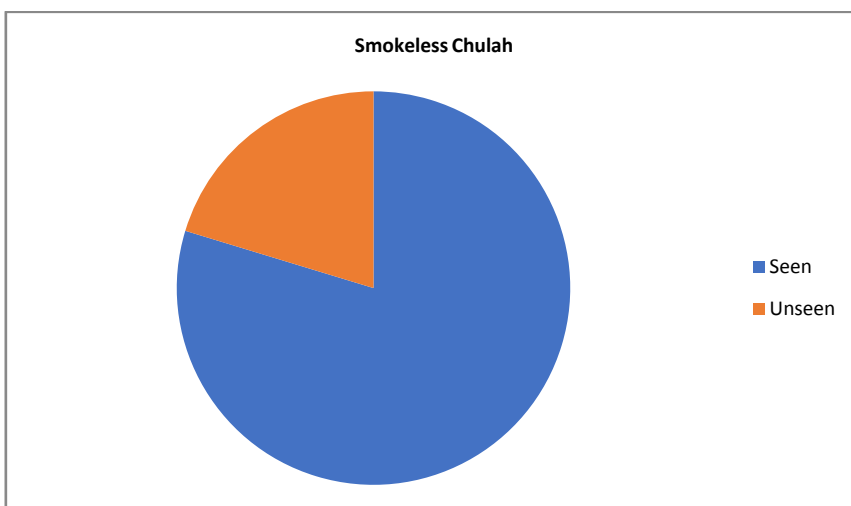
29. Burning Of Fire Wood

59.4% of youth agrees that burning of firewood in chulah add to the indoor air pollution, 36.7% strongly agree, 5.5% disagree and 0.8% strongly disagree



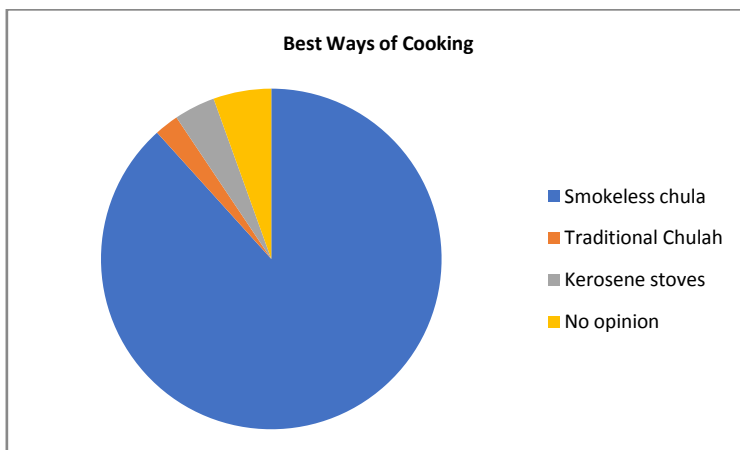
30. SmokelessChulah

Maximum of the youth that is 79.7% have seen smokeless chulah and 20.3% are of the opinion that they haven't seen smokeless chulah.



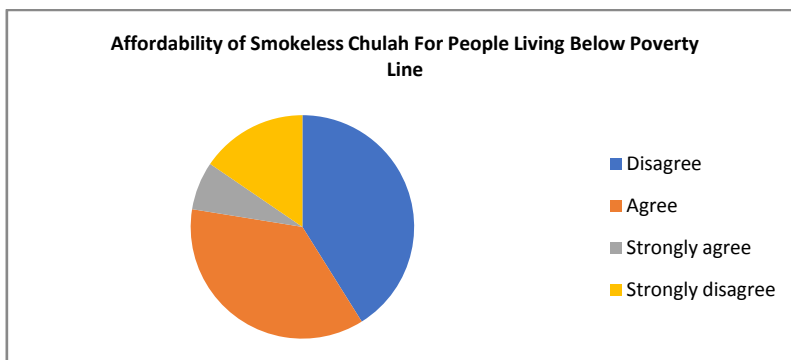
31. Best ways Of Cooking

The survey revealed that 88.3% of the youth found that smokeless chulah is the best way of cooking, 2.3% believed traditional being the best way while 3.9% goes with kerosene stoves. On the other hand 5.5% have no opinion.



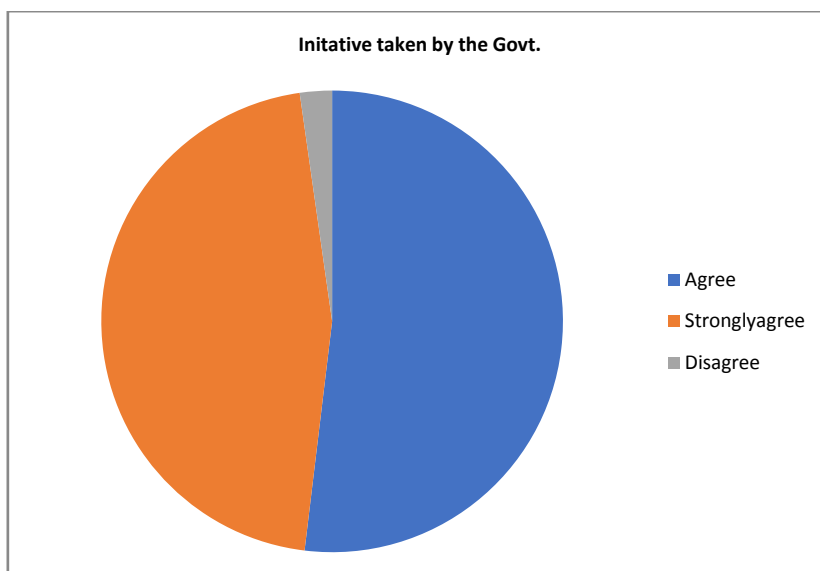
32. Affordability Of Smokeless Chulah For People Living Below Poverty Line

41.7% of the youth feels that smokeless chulah is not affordable to the people living below poverty line, while 37% feel that they can afford it. 7.1% are of the strong opinion that they can afford and 15.7% are of the strong opinion that they cannot afford.



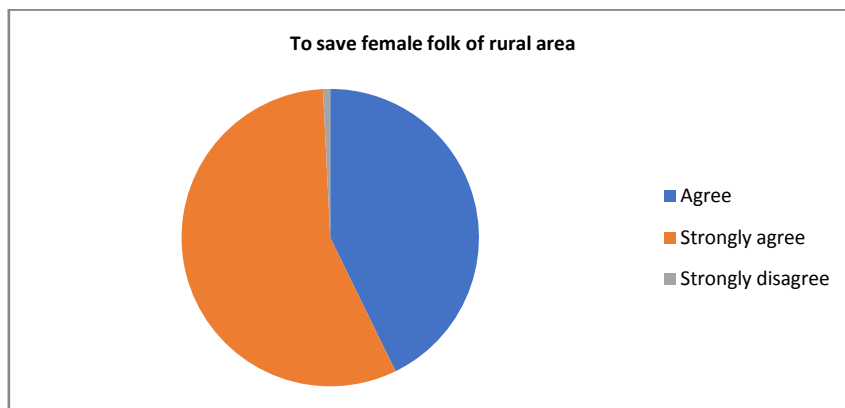
33. Initiative taken by the Government

53.1% youth as per survey agree that imitative taken by the Government to provide smokeless chulah to the womenfolk below poverty line is appreciable and 46.9%strongly agree with this and 2.3% disagree with this statement.



34. To save female folk of rural area

57.8%of the youth strongly agree with the fact that smokeless chulah can help to reduce various respiratory disease in female of rural area as they are forced to spend most of the time in kitchen.43.8% agree with this statement and 0.8% strongly disagree.



IV. Conclusion

The result of this study revealed that amongst the different age groups and genders, most effected are the female folks followed by the children, mostly belonging to the rural areas.

The problem is more prevalent in the rural areas than the urban areas and the prime reason is that the kitchens are small, low roofed and lack proper ventilation. The number of family members living in a single room in the village is also very high.

The females have to spend most of their time in kitchens, due to this their lungs take a hit. Cooking food in the village by the female turns out to be a toxin experience to them. Huge amount of carbon monoxide is released during such process. For cooking by using cheap and unprocessed means of fuel like wood, cow dung and crop residue increases the chances of exposure to such harmful gases.

This problem prevails throughout the year but as per the survey, it is mostly seem during the winter season. Other major symptom seen in people who are greatly stricken by the I.A.P is deterioration of eyes. The major reason behind a wide population using this unrefined means of fuel is the financial constrains which force them to use these products.

Even after such deadly results as many as 87% of rural households and 26% of urban households in India rely on unprocessed biomass for cooking. Women and children are the most effected by I.A.P as they spend most of their time in smoke filled rooms every day. Old aged persons are also one of the victims of this I.A.P.

Another observation collected from the survey informed us that this I.A.P is widespread in developing countries because of the economical crises which lead to creation of huge gap between the rich and poor. This in turn makes the poor vulnerable in the society regarding their living conditions

It was also very much evident from the survey they paints and varnishes also add to I.A.P. Religious ceremonies practiced in our country along with some reasons which add up to I.A.P.

The only solution for I.A.P can be brought out is by using only clean fuel, but the major challenge which is present in front of us that air purifier are very expensive and along with it the income of majority of the people can't coincide with the expense .Thus in order to improve the health of every strata of society, majorly rural women and children, the Government should initiate and implement Schemes where they can make smokeless chulah affordable to all.

V. Future Scope

The long term benefit to study this survey and to observe these patterns in our society will help us to inculcate awareness amongst the youth who have the power to change the present scenario regarding Indoor Air Pollution. We need to teach the people that not only Outdoor Air Pollution should be a hot debateable topic while solutions regarding Indoor Air Pollution too need to be looked upon for so as to escape from another disastrous future.

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