# APSWDP
# INTERNATIONAL JOURNAL OF SOCIAL WORK AND SUSTAINABLE DEVELOPMENT (IJSWSD)

**A Publication of the**

## Association of Professional Social Workers and Development Practitioners (APSWDP), India

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# Exploring The Challenges And Opportunities Of Tobacco Vendor Licensing In India: A Path Forward

Pranav Kshtriya*, Dr. Gopal Chauhan**, Rajeev Kumar Chaudhary***

## ABSTRACT

*Tobacco retailers must be licensed for public safety and health. India's top avoidable killer is tobacco. Tobacco vendor licensing is rigorous. Tobacco merchant licensing improves tobacco control. Tobacco seller licensing, a new regulation, has challenged states and municipalities. First-time laws and tobacco industry opposition have hampered uptake. Tobacco firms have attempted everything to prevent vendor licensing, which would reduce cigarette consumption. Join small merchants and vendors to counter-narratives. The media supports reactionary ideas like job loss. Public and policymaker support for livelihood. As seen in lawmaking and enforcement, agricultural organizations, vendors risking livelihood loss, tobacco industry lobbying, and bidi employees may oppose tobacco businesses.*

*Second, departments delay policy implementation. Public leaders worry about vendor licensing affecting their voting base because livelihood reasons may be misunderstood as "license raj." After notification and publishing, vendor licensing requirements and recommendations took approximately two years in two locations. Authorities, local corporations, or the state government, supported by the tobacco control community, must foresee these problems, communicate with perceived impacted groups like tobacco vendors and their organizations, and establish a counter-narrative with sensitized merchants and media. Shopkeepers selling tobacco and non-tobacco items may adjust their tale, according to research. Tobacco sellers may sacrifice toffee, candy, cool drinks, etc.*

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***Key Words***: *Vendor Licensing, India, Tobacco Control, Health Policy*

## INTRODUCTION

Uncontrolled Points-of-Sale (PoS) make it easier for anybody, particularly minors, to buy tobacco goods worldwide. (1) In 2008, WHO introduced the MPOWER package, a combination of six proven tobacco demand-reduction methods. This accelerated WHO FCTC implementation. (2) As part of MPOWER, governments must monitor tobacco usage and prevent smoking. Stop tobacco marketing and promotion, warn smokers, and help them quit. Increase cigarette taxes. (3) Helping individuals stop smoking, warning about tobacco hazards, restricting tobacco advertising and promotion, and boosting tobacco prices frequently lower tobacco demand and supply. (3) Tobacco Vendor

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Licensing (TVL) has several restrictions to decrease tobacco dealers in a city, neighborhood, or community. (4) Tobacco is sold in many nations in convenience stores, grocery stores, pharmacies, and other sites without a license (near educational institutions, youth-frequented areas - playgrounds, parks, etc.) Retailers boost tobacco promotion. (7) The 2003 COTPA Act addressed this. (8) Licensing companies and withholding new licenses may lower tobacco density naturally. One research revealed that raising license costs did not diminish tobacco-selling firms. (7) Spot inspections and license revocation for violations may improve tobacco control laws. In 2014, the WHO FCTC Conference of Parties (COP) accepted the Article 6 Guidelines, which suggested authorization/ licensing and fiscal marking for tobacco product supply chain management. Tobacco vendor laws may be strengthened by regulating purchasing age, point-of-sale advertising, and e-cigarette sales during licensing. (4) Tobacco vendor licensing may prevent certain establishments from selling tobacco. (4) A track-and-trace system and a robust licensing system will help the government control and regulate the supply chain. (9) Strong local tobacco store licensing rules may deter youth smoking and e-cigarette use. (10) Pharmacies cannot get TVLs. (10)

**Objective:** To understand the challenges & opportunities of TVL's with special focus on India.

**Method:** A review of the current literature was carried out to fulfill the objective. Due to the scarcity of published articles on TVL's, information from every source including grey literature & published papers focusing on TVL were taken into consideration.

# RESULTS

**Global Practices in Tobacco Vendor Licensing: 1) San Francisco:** The San Francisco Board of Supervisors limited cigarette sellers in 2014. San Francisco's Tobacco Retail Density Policy will halve tobacco outlets. San Francisco's Cigarette Retail Density Policy restricts tobacco companies. San Francisco had the strongest tobacco retail law. San Francisco's Tobacco Retail Density Policy began January 18, 2015. (11) San Francisco's Density Policy has reduced tobacco shop licenses by 8%. This method protects low-income and minority neighborhoods with high tobacco stores and smoking rates. (11) **2) Australia:** New South Wales & South Australia require cigarette sellers to register with the NSW Ministry of Health. (12) Cigarette licenses fell 23.7% from December 2007 to December 2009. 30.9% of the total licensees with valid licenses in December 2007 had no license by December 2009, and 19.9% had fewer outlets of sale. (12) **3) European Union: Finland-** Retailers must submit an annual self-monitoring plan, pay €100-€180 licensing and €500 supervision fees, and renew their license. **Hungary-**Retailers without licenses face $2.2 million fines. Each city gets one license per 2000 residents. **Italy-**Imposed minimum cigarette outlet distances (300 meters between retailers in municipalities with a population of 30000 or less). **Spain-**Sales volume and proximity to other tobacco retailers determine licenses (minimum of 150 m). Spain auctions licenses. (13) Hungary and Finland's tobacco retail licensing reduced stores. Tobacco control shops in Italy declined 3.5% between 2012 and 2016 and 4.1% in Madrid between 2014 and 2020. (13) **4)**

**Rhode Island: Ri Model Tobacco Policy (RIMTP):** Flavored tobacco may only be sold in smoking bars, coupon redemption is prohibited, and tobacco merchants must have both a state and municipal license. Tobacco retailers in Providence have to register and pay $100 annually in April 2011. (14) **5) Santa Clara County, CA:** A 2010 Santa Clara County licensing ordinance prohibited new stores within 1000 feet of K-12 schools. Santa Clara County, CA required a $425 annual shop fee, no new tobacco outlets within 500 feet, and no license transfers when a firm dissolved. (15)

**Indian Policies & Practices:** India produces and consumes the second-most tobacco. (1) India accounts for 1 million tobacco-related deaths each year and billions in direct health expenses. (1) COTPA restricts tobacco advertisements at POS and requires vendors to post warning signs to prevent minors from buying tobacco. (5) Starting in 2015, national and subnational notice of regulations on Tobacco Vendor Licensing (TVL) limited tobacco product availability and compliance with tobacco control and related legislation. (16) In 2017, the Indian Ministry of Health advised states to study TVL and ban the sale of non-tobacco products aimed to minors, including as toffee, sweets, chips, biscuits, and soft drinks. Six states and forty-eight districts/cities in seven others have notified TVL policies and are developing operating instructions. (16) Ministry of Housing & Urban Poverty Alleviation, Government of India, 25 September 2018(17): Tobacco dealers may be licensed by municipal governments. Retailers may comply with tobacco control laws and generate revenue for municipal licensing and public health.

It may restrict tobacco sales to authorized stores/kiosks with valid TlN/PAN/GSTNo. Tobacco stores should also be prohibited from selling non-tobacco products like toffees, candies, chips, biscuits, soft drinks, etc., to non-smokers, especially children. State and local regulations govern retail tobacco sales.

**Best Practice in India:** In 2016, the state of Himachal Pradesh in India passed the Loose Cigarettes and Biddies Prohibition and Regulation of Retail Business of Cigarettes and Other Tobacco Products Act in an effort to address the widespread availability and high rate of adolescent cigarette use in the region. The new law establishes a licensing system for tobacco sellers and prohibits the sale of loose tobacco, making it easier to track and regulate the sale and use of tobacco products. The restrictions went into effect on July 30, 2018, and as a result, many vendors who previously sold cigarettes along with other necessities such as candy and food have stopped selling cigarettes in order to avoid losing business. This has led to a decline in the overall availability of tobacco products in the region. It is important to carefully check for grammar and precision when communicating this information. (18)

**Challenges To Implement TVL:** A database of licensed vendors can help kiosk mapping in jurisdictions with multiple suppliers. Business licensing education can teach tobacco vendor and merchant registration laws. However, store visits may increase agency effort. Implementing point-of-sale standards once merchants are permitted may require government cooperation. (4) It is important to note that tobacco companies may oppose tobacco vendor licensing (TVL)

laws as they can reduce financial and in-kind incentives for stores to sell and promote their products. TVL rules also restrict tobacco sales. Additionally, vendors may resist licensing to avoid taxes and legal issues. Overall, the process of licensing tobacco vendors can be complex and may require addressing various challenges such as industry opposition and vendor resistance.(4)

**Recommendations & the Way Forward:** Tobacco retail licencing can improve public health by enforcing age restrictions and monitoring other tobacco control laws. In addition to these benefits, legislators may be financially motivated to support licencing by reducing tax fraud, cigarette smuggling, regulatory enforcement, and advertising rules for other goods. Retailers' involvement in policymaking may slow reforms to cigarette, alcohol, and casino licences. To encourage tobacco store closures and promote licencing, businesses may be offered business counselling and other services. Evidence of licencing system efficacy and study of European and worldwide policies may also help promote licencing. Stakeholder viewpoints may help optimise retail licencing strategy. Tobacco retailers can sell to children and circumvent other tobacco control measures without licencing. Tobacco dealers can be reduced and tobacco control improved via licencing. (19) Food, stationery, toy, and other kid-friendly stores cannot sell tobacco products due to licencing requirements. Tobacco retail licencing can assist parties meet their WHO FCTC Protocol to Eliminate Illicit Trade in Tobacco Products monitoring and tracking duties.

**Conclusion:** In conclusion, the implementation of tobacco shop licensing in India and other policy settings can be an effective measure in reducing smoking and improving the monitoring of tobacco sales. This is especially effective in countries with a strong focus on child protection and political commitment to reducing tobacco use. Licensing systems can help to reduce the number of tobacco vendors and aid in the enforcement of laws prohibiting the sale of tobacco to minors. Overall, tobacco shop licensing can be a valuable tool in promoting public health and reducing tobacco-related harm.

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# Perceived Stress And Quality Of Life Among Working Women During COVID-19

Akshit Katoch*, Dr. Monica Munjial Singh**, Pankaj Puri***

## ABSTRACT

*Background: The economic needs of Indian families are increasing day by day. The sky rocketing value of living, growing expenses on education of children, rising value of house properties in India etc demands every family in India to find the ways and means to increase the income of the family. However, during brought the compulsion of complete lockdown where especially working women with their multiple roles such as wife, mother and daughter-in- law needed to perform all the household activities along with their paid job.  Thus current study was planned to assess the perceived stress and quality of life among working women during COVID-19. Methods: The research design of the study was cross sectional and comparative in nature.Sample comprised of total 50 (25 Govt. and 25 private) working women in the tricity. Results: Results showed that working women in government had better quality of life and less perceived stress than compare to private setting however there is no significant difference found. Conclusion: The findings of the study revealed that both the groups perceived higher stress during the Covid-19 pandemic. In quality of life in social relation domain there is significant difference was found in both settings as in private setting for the job security private working employees keeps changing their jobs or shift to government setting.*

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*Keywords: Working Women, Covid-19, Perceived stress and Quality of life.*

## INTRODUCTION

The economic needs of Indian families are increasing day by day. The sky rocketing value of living, growing expenses on education of children, rising value of house properties in India etc demands every family in India to find the ways and means to increase the income of the family **(Dashora, 2013)**.  As well as government have been increasing the awareness, education and opportunities to women and women are also availing such opportunities. In India working women faced lot more challenges than other counter parts of the world. In India men did not participate in sharing the most of household chores, it is women responsibility to do household work like cooking, cleaning the house, do the dishes, wash clothes etc**. (Dashora, 2013)**. Men have to do few chores that deal with outside the house. Because of this the major burden of running the family is on the shoulders of women.

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Earlier, as women are homemakers it's alright for them to handle the household chores **(Dashora, 2013) (Aazami et al, 2016)**. Now, with the modern needs and increasing the needs for getting more income for the family, women have to work harder. They are doing 09 to 05 job and added household chores that they handled as homemakers. This affected their 1 psychological well being. They have started sleeping lesser than before because only they have wake up early to cook for the family, getting themselves ready for the job, get their children ready for schools, because of it average women lost 2 hours of sleep per day and up to 14 hours sleep per week. It is not just about the reduced sleep, but such a lifestyle builds stress **(Dashora, 2013) (Aazami et al, 2016).** Also Covid-19 pandemic has impacted the world, it is a disease that caused by a virus namely SARS-COV-2, firstly identify in China in Wuhan city in December 2019. India reported its first case in 27th Jan 2020. 11th March 2020 WHO declared it as pandemic **(Mohan et al, 2020).** India imposed complete lockdown on 24th March 2020 after the declaration of Covid-19 as a national disaster (**Economic Times**). The disasters that emerged before the COVID-19 pandemic had affected women in a very different way as compared to this time. Earlier women used to reduce their working hours or for the time being, and they stepped down from their job **(Andrew et al, 2020)**, but this pandemic brought the compulsion of complete lockdown where especially working women with their multiple roles such as wife, mother and daughter-in- law needed to perform all the household activities along with their paid job **(Andrew et al, 2020;**

**Carlson et al, 2020**). *The Economic Survey 2019-20*, published by the Government of India, also reports that, "the number of women working in the general payroll / wage rate has increased by 8% (from 13% in 2011-12 to 21% in 2017-18) with the addition of 0.71 crore new jobs for women workers in this category **(Ministry of Finance Government of India, 2020)**. The participation of women in the workplace is conditional and is largely determined within the structure of the patriarchs. A study by Economic and Political Weekly found that in India about 40-60 percent of both men and women believe that women should not work outside, that their husbands have well-paying jobs **(Kamdar, 2020**, *India's women bear the burden of unpaid work –with costs to themselves and the econom*y**).** Therefore, it can be concluded that in cases where women's paid employment is second only, it means that the survival rate of women and their paid work is darkened in households when the demand for their unpaid work is high.  A study done by **Sinha in 2017** on *multiple roles of working women and psychological well-being* with an aim to study the work-family conflicts on psychological well-being experienced by working women and to study the social support role in the psychological well-being of the working women.  The data was collected on 82 working women and 82 homemaker women using purposive sampling using PGI Health Questionnaire and PGI Social Support Questionnaire. The results of the current study indicated that working women had higher psychological well being as compare to homemaker women whereas homemaker women had higher

social support as compare to working women. Study also reveals that employment has raised their status, enhances her self-worth and enhances their psychological well being **(Sinha, 2017, *Multiple roles of working women and psychological well-being*)**. A study done on ***women, work and pandemic and its impact during lockdown on working women in India*** by **Jasrotia** et al. The study explores the challenges and possibilities of the work from home scenario in context with working women in India. The sample of 203 working women was taken through Google form questionnaire to grasp the work life balance and gender roles in family spaces. The results of the study showed that spouses of these women are sharing some responsibilities of household and children; however the main onus rests on women's shoulders. The majority of the respondents reported that they have to give a big share of their time to household activities by compromising their work efficiency on the job **(Jasrotia et al, 2020, W*omen, work and pandemic and its impact during lockdown on working women in India*)**. During the covid-19 pandemic everyone's life had been changed significantly. It had impacted largely the students, working women; entrepreneurs etc. This time made additional burden to married working women as there was less support from other helpers and they need to do

all the household chores along with their paid job. As well as there is paucity of study regarding the perceived stress and quality of life among working women during covid-19. So the current study was planned to assess the perceived stress and quality of life among working women during covid-19.

**Aim of the Study:** To assess the perceived stress and quality of life among working women during Covid-19

**Objectives of study:**To assess the quality of life and perceived stress among working women during COVID-19, To Compare the quality of life and perceived stress among working women during COVID-19 in Govt and private Set-up

**Methodology:** The research design of the study was cross sectional and comparative in nature.Sample comprised of total 50 (25 Govt. and 25 private) working women in the tricity. Inclusion criteria was female married atleast for 2 years, working in Government setting or private setting atleast for 2 years and age range 20-45 years and exclusion criteria was presence of developmental or intellectual disability.

**Instruments:** In order to assess the quality of life and perceived stress following tools were used socio-demographic data sheet, World Health Organization Quality of Life-BREF (WHOQOL-BREF) **(WHOQOL-BEF, 1996)** and Cohen Perceived Stress Scale **(Cohen, 1983)**.

# RESULTS

Table 1 Socio-Demographic Details:

| Variables | | Groups | | Chi-square | P-value |
|---|---|---|---|---|---|
| | | Government | Private | | |
| Age Govt. working mean ±SD =33.12 ±4.825, Private Working mean ± SD 34.36 ± 4.725 t= -.918 p=0.66 | | | | | |
| Education | Matric | 0(0%) | 1(4) | .500 | .131 |
| | Intermediate | 0 (0%) | 0(0%) | | |
| | Graduate | 4 (16%) | 2(8%) | | |
| | Post-Graduate | 11 (44%) | 12(48%) | | |
| | Professional | 10(40%) | 10(40%) | | |
| Occupation | Legislators, Senior Officials and Managers | 1(4%) | 1(4%) | .395 | .071 |
| | Professional | 21(84%) | 22(88%) | | |
| | Technicians and Associate Professionals | 0(0%) | 0(0%) | | |
| | Clerks | 3(12%) | 0(0%) | | |
| | Skilled workers and Shop market sales worker | 0(0%) | 0(0%) | | |
| | Craft and related trade workers | 0(0%) | 0(0%) | | |
| | Plant and Machine Operators and Assemblers | 0(0%) | 0(0%) | | |
| | Self Employed | 0(0%) | 2(8%) | | |
| | Unemployed | 0(0%) | 0(0%) | | |

| Family Income | 0-10001 | 0(0%) | 0(0%) | .403 | .062 |
|---|---|---|---|---|---|
| | 10002-29972 | 2(8%) | 2(8%) | | |
| | 29973-49961 | 3(12%) | 7(28%) | | |
| | 49962-74755 | 6(24%) | 4(16%) | | |
| | 74756-99930 | 4(16%) | 0(0%) | | |
| | 99931-199861 | 4(16%) | 6(24%) | | |
| | Above 199862 | 6(24%) | 6(24%) | | |
| Religion | Hinduism | 18(72%) | 21(84%) | .248 | .10 |
| | Sikhism | 6(24%) | 4(16%) | | |
| | Islam | 1(4%) | 0(0%) | | |
| | Others | 0(0%) | 0(0%) | | |
| Family type | Nuclear | 16(64%) | 16(64%) | .616 | .231 |
| | Joint | 9(36%) | 9(36%) | | |
| | Extended | 0(0%) | 0(0%) | | |
| Preference for Family type | Nuclear | 15(60%) | 15(60%) | .500 | .113 |
| | Joint | 9(36%) | 10(40%) | | |
| | Extended | 1(4%) | 0(0%) | | |
| Have Children | Yes | 19(76%) | 17(68%) | .377 | .204 |
| | No | 6(24%) | 8(32%) | | |
| Substance Intake | Yes | 0(0%) | 2(8%) | .245 | .245 |
| | No | 25(100%) | 23(92%) | | |

Table 1 shows the socio-demographic details of the participants. The results of the study showed the homogeneity in socio-demographic characteristic of both the groups. The majority of the participants were post-graduate 46%, majority were working as professionals 86%, majority were belongs to Hindu religion 78%, majority from 64% nuclear family and majority were given preference to nuclear family (60%) as choice of family type.

**Table 2 Quality of Life**

| Variable | Groups (N=50) Mean ±SD | | t | p value |
|---|---|---|---|---|
| | **Government** | **Private** | | |
| **Physical Health** | 46.64±12.023 | 42.24±9.439 | 1.439 | .1566 |
| **Psychological Health** | 65.72±13.882 | 60.84±19.145 | 1.032 | .3073 |
| **Social Relations** | 79.72±13.936 | 60.8±25.933 | -3.213 | .0023* |
| **Environmental** | 73.92±9.027 | 70.16±17.442 | .957 | .3432 |
| **Quality of Life** | 66.5±14.43 | 58.51±11.70 | .86 | .4228 |

Table 2 shows the quality of life of working women in government settings and private settings. There is no significant difference found in both groups in total score however, in social relations there is significant difference found between both groups.

**Table 3 Perceived Stress:**

| Variable | Groups (N=50) Mean ±SD | | t | p value |
|---|---|---|---|---|
| | **Government** | **Private** | | |
| **Perceived Stress** | 22.28±5.33 | 23.32±4.95 | -.715 | .478 |

Table 3 showed the perceived stress among working women of both groups. Results of the study showed high stress among working women in both government settings and private settings. The results showed that in private settings working women has more stress than government settings working women however, this difference is not significant.

## DISCUSSION

The present study was conducted on working women in government and private settings in tricity. The aim of the study was to assess the quality of life and perceived stress among working women during COVID-19 in Govt and private Set-up. The study design was cross-sectional and comparative in nature. In this study,

researcher used WHOQOL-BREF and Perceived Stress Scale to assess the quality of life and perceived stress among working women in government and private settings. During COVID-19 there is paucity of the research which highlights the quality of life and perceived stress among working women. So the current study was planned to assess the quality of life and perceived stress among working women during COVID-19. In this study, the characteristics of the sample population included mean age of Govt. working women was 33.12 years and private working women mean age was 34.36. The majority of the participants were post-graduate 44% and 48% in government settings and private settings respectively. In both the setting majority of the participants were working as professionals, 84% and 88% in government settings and private settings respectively. In the private setting majority were in income range of 29973 to 49961 per month (28%), followed by income range 99931-199861 (24%) and above 199862 (24%), whereas in government setting majority were in the income range of 49962-74755 (24%) and above 199862 (24%). 78% of the participants belonged to Hindu religion and followed by 20% Sikh religion, and this is because of 80% population in Chandigarh belongs to Hindu religion (Census 2011). In both groups majority were living in nuclear family 64% in both government settings and private settings followed by 36% in joint family. In both settings government and private majority of the working women gave preference for nuclear families (60%), similar finding also highlighted in (Niranjan et al, 1998) that the nuclear families are on the rise in almost all parts of the country. Majority

of the participants did not report 96% any substance intake. There is no significant difference in the characteristics of both the groups that shows homogeneity in the both groups.

Quality of life was assessed using the WHOQOL-BREF which divided into 4 domains physical health, psychological health, social relations and environmental. In the physical health domain the mean score of working women is 46.64 and 42.24 in government and private settings respectively, in psychological health the mean score is 65.72 and 60.84 in government and private settings, in environmental mean score is 73.92 and 70.16 in government and private settings, in social relations mean score is 79.72 and 60.8 in government and private settings and in overall quality of life mean score is 66.5 and 58.51 in government and private settings. There is no significant difference found in physical health, psychological health, environmental and overall quality of life score in both the groups. However, there is significant difference found in the score of social relations domains in both groups which depict that government working women had better social relations as compared to private settings working women. For the purpose of job security, private working employees keeps changing their jobs or shifts, tries to move government settings. This study found that government working women had better quality of life as compared to private setting working women however there is no significant difference found. The perceived stress was assessed by using Cohen Perceived Stress Scale.  Results of the study showed high stress among working women in both government settings and private settings as in both

group mean is more than 20 (22.28 and 23.32 in government and private settings respectively). The results showed that in private settings working women has more stress as compared to government settings working women however, this difference is not significant.

# CONCLUSION

The present study was conducted on working women in government and private settings in tricity. The aim of the study was to assess the quality of life and perceived stress among working women during the COVID-19 and compare their quality of life and perceived stress among working women during COVID-19 in Govt and private Set-up. The study design was cross-sectional and comparative in nature. In this study researcher used WHOQOL and Perceived Stress Scale to assess the quality of life and perceived stress among working women in government and private settings.  The results of the study showed the homogeneity in socio-demographic characteristic of both the groups. The majority of the participants were post-graduate 46%, majority were working as professionals 86%, majority were belongs to Hindu religion 78%, majority from 64% nuclear family and majority were given preference to nuclear family (60%) as choice of family type. The quality of life of working in government setting is high as compared to working in private settings, however there is no significant difference was found between them in domains of physical health, psychological health, and environmental in both setting. In the social relations domain there is significant difference was found in both settings as in private setting for the job security private working employees keeps

changing their jobs or shift to government setting.In the perceived stress scale, the results highlighted that in private settings working women has more stress as compared to government settings working women however, this difference is not significant. The longitudinal studies need to be conducted to assess the long-term psychological/psychiatric impact of the COVID-19 pandemic on working women.

Strength of the Study:

The study was carried out using standardized tools.

Stringent inclusion and exclusion criteria

Homogeneity of the groups

The data obtain can be processed through descriptive analysis, providing foundation for future research opportunities.

Limitations of the Study:

The sample size is small and it may be done on larger scale.

Sample selection is limited to tricity, can be extended to other parts of India.

Source of stress in working women during the Covid-19 pandemic were not identified.

Recommendation for Future Study:

A study may be done on a larger scale with large sample size

Mixed method including qualitative and quantitative can be adopted for comprehensive and better understanding of the study

A study may be done to explore the social support of working women and its impact on their quality of life and perceived stress.

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# National Health Mission: Exploring the Extent of Awareness of Rural Poor Women in Punjab

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## ABSTRACT

*The key emphasis of the present paper is to reconnoitre the level of awareness of the National Rural Health Mission (now known as National Health Mission NHM) for the health promotion of the rural people in Punjab. Health and welfare has been the main objective of State governments. For this, various health schemes have been introduced by the State and Central Governments. A great deal of efforts has been made by the central and state governments to improve the health status of rural poor. Not only the government but various voluntary organizations are also included in the task. As for Punjab, rural population is the highest as compared to other states. But in spite of it, it can't be denied that these poor people are not able to achieve a good health status. It was found that lack of awareness among rural poor about health programmes make them vulnerable to health discrimination. The awareness programmes are also aimed at raising the health status of rural poor. So the present paper is grounded on empirical study and finds a wide-ranging lack of awareness about the basic health schemes among the indented beneficiaries and it also delivers certain recommendations that may result in better execution of the appraised programme in study area.*

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*Key words:* *National Rural Health Mission, Health Schemes, Health Block and Rural Poor*

## INTRODUCTION

Each year in India 2.4 million children and about 136,000 women die. These figures signify about one-fifth of the worldwide total. Only when a histrionic decrease in these pointless losses is attained, can India hope to reach the SDGs on maternal and child mortality.

India's **National Rural Health Mission** was propelled in April 2005 with a sturdy pledge to decrease maternal and infant mortality and deliver worldwide access to public health amenities. The continuing second phase of India's **Reproductive and Child Health Program (RCH II)** is an essential and vital constituent of this mission. The National Rural Health Mission pursues to offer actual health care to the countryside inhabitants, particularly the deprived groups including women and children, by improving access, enabling community possession and demand for services, solidification of public health structures for effective service delivery, augmenting equity and responsibility and endorsing decentralization.

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The NRHM covers the whole country. This is essentially a plan to assimilate the ongoing vertical programmes of Health & Family Welfare, and address problems related to the determinants of Health, like Sanitation, Nutrition and Safe Drinking Water. The National Rural Health Mission pursues to accept a sector wide method and aims at systemic reforms to enable efficacy in health service delivery. This mission includes key national programmes, namely, the Reproductive and Child Health II project (RCH II), the National Disease Control Programmes (NDCP) and the Integrated Disease Surveillance Project (IDSP). It will also permit the mainstreaming of Ayurvedic, Yoga, Unani, Siddha and Homeopathy Systems of Health (AYUSH). While providing a broad outline for operationalization, NRHM lists a set of core and additional strategies to encounter its goals.

Essential plans of NRHM include: Decentralized village and district level health planning and management, deputation of Accredited Social Health Activist (ASHA) to enable access to health services, consolidation of the public health service delivery infrastructure, particularly at village, primary and secondary levels. Then mainstreaming AYUSH, enhanced administrative capacity to organize health systems and services in public health, stress on evidence based planning and implementation through improved capacity and infrastructure, promoting the non-profit sector and healthy behavior to improve inter-sectoral convergence, increase social participation and community empowerment.

The NRHM aims at firming up hospital care for rural areas. However due to numerous reasons, the working of Community Health Centres has not been as anticipated. These Centres are the First Referral Units as far as healing care is concerned and are also the link between primary care and tertiary care. With the accessibility of professional care in these Centres, it was felt that these would be the right breaking ground.

The health sector presents a diverse picture. Despite certain improvements - in infant mortality, institutional births, family planning, and the understanding of AIDS - a large incomplete agenda remains. Maternal mortality rates and child malnutrition levels remain determinedly high - 45 percent of India's children remain malnourished and 70 percent are anemic. Females receive less health care than males.

Even a woman who had problems with preceding pregnancies is generally preserved with home-based medications only for three reasons: the choice that a pregnant woman seek assistance rests with the mother-in-law and husband, monetary contemplations, and fear that the treatment may be more damaging than the sickness.

Considerable growth towards established purposes for the 10th Plan aimed to deliver vital key healthcare services chiefly to the under privileged and underserved sections along with decentralization of responsibilities and funds for the healthcare to PRIs was setup in Punjab. In view of the 73rd Amendment in the Constitution of India, the Department of Health & Family Welfare has planned an substitute health delivery system for the Secondary Health Centres i.e. Rural Dispensaries in the State of Punjab to deliver improved healthcare services in the rural areas where fraction of populace

living in poverty is much higher.

Punjab is challenging numerous serious encounters in the health sector. A considerable portion of populace remains deprived of basic health care facilities despite the National Rural Health Mission (NRHM) and other health initiatives by the government and related agencies. The issues of availability, accessibility, acceptability, affordability and quality with regard to health care remain as serious concerns. Against this background the study targets at measuring the health services under NRHM to the rural women in Patiala district.

A rigorous review of the studies concern with Government policies, welfare schemes and health schemes for rural women of rural areas has discovered that little care has been paid towards these concerns and most of the studies are related to the issues of social changes among the rural poor. An attempt has been made to analyze as to whom the people are named rural people and whose awareness about the health schemes is the central motif in this paper.

Thus State Government must take initiative to make awareness among the general public about the health schemes to be implemented/being implemented for the improvement in the health status of rural poor by the different departments of the State Governments through digital and print media. Further taking up IEC activities on a enormous scale to increase overall awareness level of the rural inhabitants about numerous development programs commenced for them as well as to make them aware of their rights and privileges, health, hygiene importance of child care and other development measures.

The real living situations of families below the poverty line in many poor districts of Orissa and Madhya Pradesh and observed a large gap between the administrative facts and the people's information related to the process of socio-economic progress of the poor. It unfavourably assessed the influence of the government's inefficient steps to elevate the poor in those areas (Saithnath, 1996).

In this regard, out of the 104 respondents who perceived about the government schemes, 78 stated that they knew only the name of the scheme. 22 respondents stated that they also knew from where to get the benefit of that scheme. Only 4 respondents seemed to be assertive that they knew all about the scheme that is regarding the procedure of application, decision-makers, and the agency they had to approach.  So, the study faults the social, and political groups and governments that are not there to ensure that the policies are imposed with competence and also faults these NGOs / marked clusters/small activists who would never want awareness to permeate down to the rest of the persons (Singh, 2003)[8]. It is observed that there is a need to reinforce the sub-center by preparing them with infrastructure, logistics, and instruments so that non-complicated normal delivery can be conducted by the trained staff at the sub-center level in the distant far-flung regions (**Nandan Deoki, 2008**)[9]

## THE STUDY

The locus of this study is Punjab which is one of the progressive states of India. As in India, so in Punjab, the women especially from the lower strata have suffered discrimination in various forms

and have had less access to professional health care services. However, in modern times, after independence, successive Governments in Punjab attempted to raise the status of women and through wellness programs. Though there is no doubt that the severity of paucity of health services is less in Punjab as compared to other parts of India yet the benefit of various Government welfare schemes has not been fully garnered. As for the scene of the health of women in Punjab, the progress report published by the State Government shows the efficacy and utilization of various programs implemented for their welfare.

## METHODOLOGY

Patiala district is a mainly rural district and has an area of 3625 square kilometers. As per the 2001 census survey, a devastating 65% were in rural areas and only 35% were living in urban areas. Punjab is alienated into four regions, identified as Malwa. Majha, Doaba and Puadh. Patiala district lies in the Puadh area and the standard vernacular spoken in the district is known as Puadhi.

Administrative Sub-divisions: Patiala district is sub-divided into 5 sub-divisons/ tehsils, 3 sub-tehsils, and 8 blocks Patran (76 villages); Nabha (174 villages); Patiala, Sanaur, Bhunerheri (358 villages); Rajpura, Ghanaur (277) and Samana (61 villages). For the sample of the present study, the principle unit of drawing the sample was a Village. Keeping in view the equal representation of each of the 08 Community Blocks in Patiala District, 04 villages were randomly selected from each block. Thereafter the health service delivery centres from the sampled village were selected for research investigation.

Likewise, 30 health service delivery centers (PHCs/Mini PHCs/CHCs/Sub centers/ Dispensaries) formed the sample for the study. In the last stage, a total of 320 women beneficiaries in the age group of 17-45 years (randomly selecting 10 women beneficiaries from the selected villages) were interviewed to know their perceptions and views about various aspects of NRHM.

The major aim of this research paper is to study the level of awareness among the rural poor women about the health facilities being provided by the Governments and NGOs. In this paper we analyze the barriers of backwardness and marginalization of rural poor. Here the descriptions of some of the health programmes and schemes launched for the promotion of education health and living standard among rural poor with focus on women has been highlighted.

Keeping in view the limited time and facilities the investigator selected only one district of Punjab with the assumption that it represented the whole population.

The data was gathered in the months of July- November of 2011, with the assistance of a pre-designed and structured interview schedule. The interview schedule comprised of questions framed to gather the appropriate information according to the pre-decided objectives of the current study.

## FINDINGS ABOUT THE STUDY

There are various schemes and programmes under NRHM, which shall be better accessed if the rural women are aware of them. In this context the awareness level of the sampled rural women of the villages under the health block of Patiala has been assessed. First

and foremost is whether they have heard of National Rural Health Mission or Sarv Sehat Abhiyan. Then awareness on important schemes and programmes like Janani Suraksha Yojana, Rogi Kalyan Samiti, AYUSH, Free Bus Pass Scheme, New Born Services, Rural Emergency Transport Scheme etc have been analyzed in this Chapter.

National Rural Health Mission (NRHM) also known as *Sarv Sehat Abhiyan* was launched in 2005 with the aim to reach out to the rural masses with health services. In Punjab the actual implementation began from 2008. Though not all women are aware of NRHM and various programs under it yet the rural women have admitted that there is a difference between before and after the launch of NRHM. Number of institutional deliveries has increased inspite of strong faith in traditional services of *dai* etc.

**Table 1.  Distribution of Respondents as per Awareness about NRHM**

| S. No | Have you heard about National Rural Health Mission? | Distribution of Respondents as per Awareness about NRHM | | | | | | Total |
|---|---|---|---|---|---|---|---|---|
| | | Dudhan Sadhan | Harpalpur | Kauli | Bhadson | Shutrana | Kalomajra | |
| 1. | Fully Aware | 0 (0.0) | 1 (2.0) | 6 (12.0) | 8 (16.0) | 6 (12.0) | 1 (2.0) | 22 (7.3) |
| 2. | Partially Aware | 15 (30.0) | 29 (58.0) | 19 (38.0) | 16 (32.0) | 30 (60.0) | 15 (30.0) | 124 (41.3) |
| 3. | Not at all Aware | 35 (70.0) | 20 (40.0) | 25 (50.0) | 26 (52.0) | 14 (28.0) | 34 (68.0) | 154 (51.3) |
| | **Total** | **50 (100.0)** | **50 (100.0)** | **50 (100.0)** | **50 (100.0)** | **50 (100.0)** | **50 (100.0)** | **300 (100.0)** |

Figures in parentheses denote percentages

The maximum targeted beneficiaries do not get welfare from the government health schemes because of their unawareness. In this section the awareness level of the rural women regards services, programmes, and infrastructure has been assessed. Keeping this in mind, the respondents were enquired if they knew about the NRHM for the health development of rural people. If health services are to be utilized to the optimum awareness is of prime importance. Analysis from Table 1 shows that out of a total of 300 respondents, there were more than half 154 (51.3 percent) of the women were not at all aware of NRHM.

While 48.6 percent of the women responded that they knew something about NRHM. NRHM has been launched since 2005 but not many rural women are aware of NRHM.
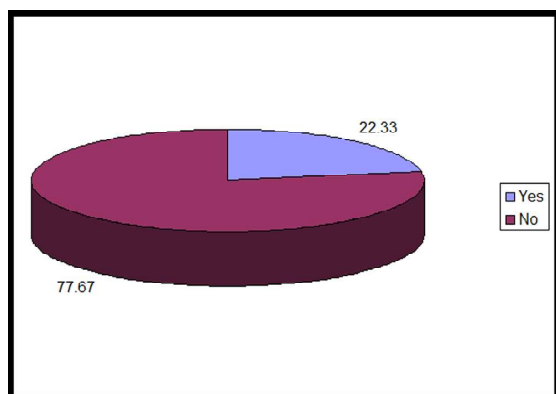


**Figure 1 : Shows Distribution of Respondents Regarding Knowledge about NRHM**

Thus it is clear that the awareness of rural poor women about the NRHM schemes is very low. Only 48.6 % out of the total 300 respondents knew about NRHM schemes. It is because of a variety of reasons and the most important among them are illiteracy, poverty, and lack of extension services of the government.

In Pathak and Pandey's study (2005) more than three-fifths (75.7%) sampled respondents knew about the loan schemes only. The rest of the schemes relating to housing, cattle and cobblers, etc. were lesser known to them. The strategies should be towards mobilising and organizing the poor Scheduled Caste families in Self Help Groups creating awareness on literacy, health care, and several schemes to improve the capacity and ability of poor people to manage risks and promote self-reliance.

## CONCLUSION AND RECOMMENDATION

In the background of outcomes, it might be resolved that the maximum rural women are not cognisant of the numerous health programs implemented by the Government. The chief explanations for this level of ignorance are their illiteracy and poverty. Due to their illiteracy, they have not been able to get any benefits from numerous health programs. In every Welfare State, the well-being of the rural poor has always been the main objective. For this, numerous health programs are presented from time to time by state governments keeping in mind its legitimate provisions. A great deal of efforts has been made by the union and state governments to progress the health economic, educational, and social status of these rural people but that remains lop-sided because of their illiteracy and unawareness of these measures by the people for whom these measures are meant. In this scenario, what is needed is more is dissemination of awareness among rural people regarding these health schemes so that the benefits of these schemes can be optimized. In order to remove the prevailing ignorance and illiteracy, the government should initiate a state-wide campaign to educate them and strengthen and streamline the existing health schemes.

In order to raise the general awareness among the rural population for the successful implementation of various health programs for bringing improvement in their quality of life, there is a need for systematic and sustained Information, Education, and Communication (IEC) activities in the rural areas targeted at the ignorant population. So, awareness

of various health schemes is imperative so, that the rural people can avail proper benefits of these health programs.

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# A Study On Assessment Of Occupational Health Hazards Among The Pourakarmikas In Udupi District

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## ABSTRACT

*Background: Street sweepers, who play a significant job in keeping up the wellbeing and cleanliness in communities, are chronically exposed to dust particles. Sweeping with brooms, vehicular movements and other human exercises, raise the residue particles noticeable all around. Chronic exposure to air pollution and ambient particulate matter (PM) is associated with increased rates of hospitalization and mortality due to respiratory sickness. A high incidence of cough, ceaseless bronchitis, asthma, and sniffling and eye disturbance combined with the disease of the throat has likewise been accounted for. Methods: The study was conducted in the Udupi district among different talukas named Udupi, Kundapura and Karkala. The interview was taken face to face using self-administered questionnaire for all 241 participants. Result: It was found that all 241 of the participants were aware of the health hazard they can encounter in the long run in this occupation still continue working. The results revealed the association between the years of employment and past disease (p < 0.001), flu-like symptoms (p< 0.001) and respiratory problems (p= 0.004) were statistically highly significant. Some of the respiratory problems often faced by the workers are wheezing, cough, dyspnoea and shortness of breath. Flu-like symptoms which 55.2% of Pourakarmikas mentioned were Fatigue and joint and muscle aches, Fatigue, joint & muscle aches, trembling limbs, shivering and perspiration. Conclusion: Efforts are required in the implementation as health rights of these marginalized workers to mandate the safety practices at work, occupational health surveillance and research, and law regulations that identify hazardous work stations. Provisions should be made for work-related health problems to be compensable by linking this community to public healthcare delivery systems.*

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*Key words: Occupational health hazards, Pourakarmikas, Municipal workers*

## INTRODUCTION

Access to sanitation has been pulled more into consideration in India in recent years due to the 2014propelled Swachh Bharat Mission (Clean India Mission). In India, clean condition maintenance has become a challenge and numerous health workers are employed under Municipal Corporations whose responsibility is to maintain sanitation in their particular towns and urban communities (14). Municipal solid waste specialists (MSWWs) carry a

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significant job in keeping up the wellbeing and cleanliness in the urban communities (1). The amount of overall municipal waste resulting from the waste collected by or on behalf of the municipal authorities is disposed of through the waste management system (8).

Introduction to Bioaerosols in the major word related hazard factor of trash specialists (1). Manual scavenging as a social issue has gotten national arrangement consideration since India's independence. The Employment of manual scavengers and dry latrine construction (Prohibition) Act, 1993 makes arrangements for the nullification of this training, and for the distinguishing proof and recovery of manual foragers. In Karnataka, those utilized as manual foragers and sweepers are called as *Pourakarmika/s* (6).

Street sweepers, who play a significant job in keeping up the wellbeing and cleanliness in communities, are chronically exposed to dust particles. Sweeping with brooms, vehicular movements and other human exercises, raise the residue particles noticeable all around. Chronic exposure to air pollution and ambient particulate matter (PM) is associated with increased rates of hospitalization and mortality due to respiratory sickness. A high incidence of cough, ceaseless bronchitis, asthma, sniffling and eye disturbance combined with the disease of the throat has likewise been accounted for (5).

Udupi district-initiated waste segregation under the program called swachh bharat abhiyan in the flagship of the Ministry of urban development. Udupi city is putting intense efforts to mitigate the waste generation. There has been increase in the recruitment for *Pourakarmikas* for these activities. Udupi being the coastal region generates waste majorly from the fisheries sector. There can be existing occupational hazards in thee workers. Also, labourers in sewage treatment plants are in danger of building up an expansive scope of wellbeing impacts which makes this word related gathering hard to consider, and most investigations have in this way as it was concentrated on one specific presentation and the related explicit wellbeing result. It becomes important to estimate the prevalence of the medical issues and security practices of the sanitation labourers who keep this city clean to additionally improve their security practices and preventive human services (12).

## METHODOLOGY

To achieve the objectives interview was conducted among 241 participants using a self-administered questionnaire.  The questionnaire was prepared on these domain demography, safety measures, PPE and equipment used, habits, health status and health seeking behaviour. The study was conducted in the Udupi district among different talukas named Udupi, Kundapura and Karkala. The interview was taken face to face using self-administered questionnaire for all 241 participants. For data analysis data from the excel sheet was converted into SPSS version 15.0. Data entry was done in MS-Excel and after data cleaning process it was transferred into SPSS for analysis. The primary outcome of the study is, through this study awareness can be generated among the *Pourakarmikas* to get their regular health check-ups done in the public health care sector and modification in their lifestyle to avoid medical problems caused by their occupation in future years.

The study was commenced after attaining the Institutional Ethical Committee Clearance from Kasturba Medical College. The permission was taken from three Taluk Municipal Council (Udupi, Kundapur, Karkala) to conduct the study. From the 3 Talukas of Udupi 261 participants were contacted. From Udupi Taluk 180, Kundapur 46, Karkala 35 participants are contacted based on the number of people employed in each Talukas. Informed consent was obtained at the beginning of the interview. A participant information sheet was given to each of the participants before the interview. With the help of a predesigned quantitative questionnaires, face to face interviews was conducted.

## RESULTS

Table 1: Participants characteristics (n=241)

|  |  | Frequency | Per cent |
|---|---|---|---|
| **Age category** | **18-25** | 27 | 11.2 |
|  | **26-35** | 107 | 44.4 |
|  | **36-45** | 81 | 33.6 |
|  | **>46** | 26 | 10.8 |
| **Gender** | **Male** | 204 | 84.6 |
|  | **Female** | 37 | 15.4 |
| **Educational status** | **No formal schooling** | 15 | 6.2 |
|  | **Primary school** | 89 | 36.9 |
|  | **Middle school** | 55 | 22.8 |
|  | **High school** | 77 | 32.0 |
|  | **College/diploma** | 5 | 2.1 |
| **Marital status** | **Single** | 46 | 19.1 |
|  | **Married** | 190 | 78.8 |
|  | **Widowed** | 5 | 2.1 |
|  | **Total** | 241 | 100.0 |

| Years of employment | <5 years | 68 | 28.2 |
|---|---|---|---|
| | 5-15 years | 117 | 48.5 |
| | >15 years | 56 | 23.2 |
| Category of job | Manual scavenger | 17 | 7.1 |
| | Street sweeper | 37 | 15.4 |
| | Driver | 58 | 24.1 |
| | Mechanical treatment | 8 | 3.3 |
| | Biological treatment | 121 | 50.2 |

The total number of participants in the study were 241 among which 204 were male and remaining were females and 190 of them were married. The educational status of the participants was, 89 of them received primary schooling and 15 of them did not receive formal schooling. Majority of the had 5-15 years of employment experience. The job category was 121 were in biological treatment, Manual scavenger was 17, street sweeper 37, driver 58 and 8 were in the mechanical treatment section (Table 1).

**Table 2: Health care-seeking behaviour in Pourakarmikas**

| | | Frequency | Per cent |
|---|---|---|---|
| Routine checkups | Yes | 201 | 83.4 |
| | No | 40 | 16.6 |
| | Total | 241 | 100.0 |
| Last consultation | less than 6 months | 78 | 32.4 |
| | 6-12 months | 73 | 30.3 |
| | Greater than 1 year | 49 | 20.3 |
| | Others | 41 | 17.0 |
| | Total | 241 | 100.0 |

| Reason for consultation | Consultation or advice | 143 | 59.3 |
|---|---|---|---|
| | Pain or trouble with health | 42 | 17.4 |
| | Routine check-up | 5 | 2.1 |
| | Don't know | 51 | 21.2 |
| Type of health facility visited | Total | 241 | 100.0 |
| | Private | 135 | 56.0 |
| | Public | 92 | 38.2 |
| | Pharmacy | 6 | 2.5 |
| | Both Public and private | 8 | 3.3 |
| | Total | 241 | 100.0 |

The *Pourakarmikas* got their routine health checkup done. However, 40 of them did not go for their routine health checkups. The last visit for the health checkup for 73 participants was 6 – 12 months ago, 78 of them visited less than 6 months ago and 49 of them it's been more than a year. For 143 of them, the reason for the consultation was simply to seek advice, 42 of them face pain and trouble with their health, whereas, 5 of them visited on a routine checkup basis. The type of health facility preferred by the 135 participants was private and 92 of them chose public health facilities (Table 3).

**Table 3: Health problems among the *Pourakarmikas***

| | | Frequency | Per cent |
|---|---|---|---|
| Respiratory problem | None | 169 | 70.1 |
| | Cough, Dyspnea | 4 | 1.6 |
| | Cough | 50 | 20.7 |
| | Cough, Dyspnea, Shortness of breath | 7 | 2.9 |
| | Cough, Shortness of breath | 4 | 1.7 |

| | Shortness of breath | 2 | .8 |
|---|---|---|---|
| | Wheezing | 5 | 2.1 |
| Skin condition | Irritant contact dermatitis | 16 | 6.6 |
| | Allergic contact dermatitis | 1 | .4 |
| | None | 224 | 92.9 |
| Neurological symptom | None | 200 | 83.0 |
| | Headache | 19 | 7.9 |
| | Headache, oppressive sensation | 12 | 5.0 |
| | Forgetful, dizziness | 3 | 1.2 |
| | Forgetful, dizziness | 4 | 1.7 |
| | Dizziness | 3 | 1.2 |
| Irritation symptom | None | 208 | 86.3 |
| | Nose irritation | 1 | .4 |
| | Eye irritation | 2 | .8 |
| | Eye and skin irritation | 2 | .8 |
| | Skin irritation | 18 | 7.5 |
| | Skin irritation and rash | 8 | 3.3 |
| | Skin rash | 2 | .8 |
| Flu-like symptom | None | 108 | 44.8 |
| | Fatigue, joint & muscle aches, | 1 | .4 |
| | Perspiration | | |
| | Fatigue and joint and muscle aches | 11 | 4.6 |
| | Fatigue, joint & muscle aches, | 2 | .8 |

| | | |
|---|---|---|
| Trembling limbs | | |
| Shivering | 1 | .4 |
| Perspiration | 7 | 2.9 |
| perspiration and joint and | 10 | 4.1 |
| muscle aches | | |
| Perspiration, Joint & muscle aches, | 2 | .8 |
| Trembling limbs | | |
| Joint and muscle aches | 64 | 26.6 |
| Joint, muscle aches, Trembling | 18 | 7.5 |
| limbs | | |
| Trembling limbs | 17 | 7.1 |

The health problems among the *Pourakarmikas* were, 50 of them suffered from cough while 169 of them did not have any respiratory problems. Under skin conditions, 16 of them had irritant contact dermatitis, 200 of the participants did not have neurological problems. Although flu-like symptoms were not present in 108 participants 10 of them had perspiration and joint and muscle aches, Joint and muscle aches were present 64, 18 of them had joint, muscle aches, trembling limbs (Table 4).

**Table 4: Association between years of employment and other factors.**

| Years of employment | Diseases | P-value |
|---|---|---|
| | Past disease | <0.001 |
| | Flu-like symptoms | <0.001 |
| | Irritation symptom | 0.081 |
| | Neurological problem | 0.049 |
| | Skin problem | 0.054 |
| | Ophthalmic problem | 0.025 |
| | Respiratory disease | 0.004 |

The p-value thus obtained is <0,001 which states that association between years of employment and the past disease is highly statistically significant. Association between years of employment and the flu-like symptom was found to be statistically significant with the p-value <0.001. It was found that there was no statistical significance in the association between years of employment and the Irritation symptom among the participants, as the p-value obtained was 0.081. Statistically, a significant association was found between years of employment and the neurological symptom in *Pourakarmikas* with the p-value 0.049. Minimal statistical significance was found between the association of years of employment and the skin problem with the p-value 0.054. There was a statistical significance between years of employment and the ophthalmic problem with p-value as 0.025 (Table 4).

**Table 5: Distribution of sharp injury among the participants**

|  | Frequency | Percent |
|---|---|---|
| No sharp injury | 210 | 87.1 |
| Left Hand 1 | 3 | 1.2 |
| Left Hand 2 | 2 | .8 |
| Left Leg 1 | 4 | 1.7 |
| Left Leg 2 | 2 | .8 |
| Right Hand 1 | 7 | 2.9 |
| Right Hand 2 | 4 | 1.7 |
| Right Hand 3 | 2 | .8 |
| Right Leg 1 | 3 | 1.2 |
| Right Leg 2 | 4 | 1.7 |
| Total | 241 | 100.0 |

Among the participants, it was seen that 13.9% of the participants suffered from some kind of sharp injury. The right-hand injury was seen among the majority of the participants i.e. 2.9%. However, 87.1 % do not have any sort of sharp injury (Table 5).

**Table 6: Alcohol and Tobacco use among the participants**

|  |  | Frequency | Per cent |
|---|---|---|---|
| Alcohol | Yes | 112 | 46.5 |
|  | No | 129 | 53.5 |
| Tobacco | Yes | 99 | 41.1 |
|  | No | 142 | 58.9 |
|  | Total | 241 | 100.0 |

Among the participants 46.5% of them used alcohol and 41.1% of participants used tobacco. A total of 99 *Pourakarmikas* use tobacco in either of the forms smokeless or smoke tobacco (Table 6).

## DISCUSSION

The study was conducted in the three talukas of the Udupi district, Udupi, Kundapur and Karkala. A total of 241 *Pourakarmikas* gave consent to participate in the study while some of them refuse because of the time constraints they had. *Pourakarmikas* interviewed were a manual scavenger, street sweeper, driver, mechanical treatment and biological treatment section. Around 37% of them had done primary schooling and the majority were males in the study as females *Pourakarmikas* were not willing to part of the study. Most of the participants were in this profession in the past 15 years. It was found that all 241 of the participants were aware of the health hazard they can encounter in the long run in this occupation still continue working. A study done by Pradyumna A et al in Chitradurga suggested that most of the *Pourakarmikas* are into this occupation because of the financial problems they are living with due to which they cannot afford education for themselves (6).

It was observed that despite them knowing the health hazards caused due working in this field only 83.4% of them choose to go for regular health checkups, while some of them chose not to visit health care centres anytime. The one who go for checkups, the reason usually is some sort of pain in the body and uneasiness in health. Similar results were obtained in the study done on solid waste loaders by Salve P etal I Mumbai, it showed 90% of the workers complain of pain in different parts of the body (7). However, only 2.1% go for the routine checkup while 21.2% do not know that they should go for the health checks to the healthcare centre. One of the reasons for not paying attention to their health can be the loss of pay caused by sick leave.

In this study, we tried to look for the association between the years of employment and different hazard cause from it. The results revealed the association between the years of employment and past disease ($p < 0.001$),

flu-like symptoms (p< 0.001) and respiratory problems (p= 0.004) were statistically highly significant. Some of the respiratory problems often faced by the workers are wheezing, cough, dyspnea and shortness of breath (11). Flu-like symptoms which 55.2% of *Pourakarmikas* mentioned were Fatigue and joint and muscle aches, Fatigue, joint & muscle aches, trembling limbs, shivering and perspiration. In the study done by Jayakrishnan et al in Kerala found that 7.1% of the waste management workers suffer from watervector borne disease (3). The environment in which *Pourakarmikas* work makes them prone to vector-borne diseases.

It was revealed that association between years of employment and neurological symptoms such as headache, dizziness and oppressive sensation were found to be minimal statistical significance. There are several kinds of literature which suggests the workers (*Pourakarmikas)* usually have body aches in different anatomical parts that are probably they have long hours of duty of carrying heavy loads (9, 3, 7).

This results also found out that there is no statistical significance between years of employment and irritational symptoms. Irritational symptoms such as eyes, nose and skin irritation, rashes and allergies. Statistical significance was also found in the association between years of employment and ophthalmic problems in the *Pourakarmikas*. Similarly, a study conducted among solid waste workers in Kerala revealed that the higher prevalence of accident was 73.2 % respiratory diseases, 22 % injury and eye diseases were 21% to 47% (3). The results also showed that 87.1% of the *Pourakarmikas* have no injury caused during their work

hours. Which also illustrates that the safety mechanism of these Pourakarmikas is been acknowledged as only a few as 13.9% of them have suffered from an injury at work. However, the study done in Chitradurga in Karnataka by Rangamani revealed that most of the workers there suffered from injuries and chest pain (11). They tend to consume alcohol to ignore the factual disadvantages and dirtiness in their work description. A study was done in Mumbai also suggested that consumption of alcohol and tobacco was very high among the sewage worker as it works as anaesthesia during the working hours, due to which they do not realize the filthiness of their job (7). One of the limitations of this study is recall bias on information regarding history on their experiences in their employment period.

## CONCLUSION

Most of the workers prefer to continue working despite the illnesses and exposure to diseases as they cannot afford the loss of pay on sick leaves and out of pocket medical treatment charges. It was also found that many of them lacked the knowledge on the occupational hazard they are prone to be due to the years of employment in this field. The diseases which were found to be prevalent among the *pourakarmikas* were flu-like symptoms, ophthalmic problems and respiratory diseases. The association found between the years of employment and the past diseases was statistically highly significant.

Efforts are required in the implementation as health rights of these marginalized workers to mandate the safety practices at work, occupational health surveillance and research, and law regulations that

identify hazardous work stations. Provisions should be made for work-related health problems to be compensable by linking this community to public healthcare delivery systems.

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# Role Of Women In Environmental Sustainability (With Special Reference To Gujjar Women)

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## ABSTRACT

*This paper is an attempt to explore the role of ethnic communities in environment sustainability by exploring Gujjer women's lives in relation to their environment. In the study, the significance of Women's Education for society and Environmental Sustainability has also been highlighted in the context of Culture, Knowledge, Decision-making, Confidence and adaptability, Empowerment, Income Generation, Participation in resolving Social issues, and Sensitization towards the local environment issues. The paper concluded with a stress on the education and empowerment of Gujjer women to make them full of knowledge about indigenous practices and contemporary pro-environment agricultural practices for making sustainable environment.*

*Keywords: Environment, Gujjar Women, Education*

## INTRODUCTION

Women play a crucial role in running their families in managing household, rearing children, financial and emotional well-being of all the members. In this process the use of natural resources is indispensable. The acts of mankind have a direct impact on their surroundings. Here different genders have different roles and interact with environment on different levels. In India, women are also engaged with environmental processes from carrying water, fuel, engagement in agriculture, animal fodder, cooking, cleaning, and engaging in various activities in normal areas as well as in tribal areas. UNESCO's Global Education Monitoring Report, shows empowering women has huge benefits for the environment. Education of girls and women would help in maintaining the population growth, healthcare and poverty reduction which cause a great burden on the environment. Apart from this it imparts knowledge about how to use natural resources properly.

This paper is qualitative in nature based on primary and secondary data. Researcher had interviewed few nomadic Gujjars in Panchkula and some settled Gujjars. Based on the narrative and their status inferences have been drawn.

Gujjars are also known as Van Gujjars and is a known community to be very close to nature. They were basically nomads. They particularly were dependent on the forests and animals to make their ends meet. But with due course of time, a large number of Gujjars have now settled down in the state of Haryana and have taken up agricultural work along with animal husbandry and mainstream jobs.

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Gujjars of the state of Haryana are considered as simple, culturally sensitive and industrious people. Gujjars are animal's worshippers specially buffalo and cows. It is a common fact that the Gujjars are cultivators only in the plains but in the hills they are more into dairy farming. Gujjars are also engaged into dairy farming in Haryana. Dairy sector is not only source of income to them but has a sentimental value attached for them.  An article published in Gujjar Today (10 November 2013) Gujjar women actively pitch in with the other household chores in income generation activities by making dairy sector as a profound sector but they don't generate any money out of it as control over resources lies in the hands of husband. It stressed in importance of education in main streaming women.

Van Gujjar, found in the Shivalik hills area of North India, are the pastoral semi-nomadic community, who are primarily practise Islam and have fought for their traditional rights over forests in U.P. and Uttarakhand also Known as Tongiya Cultivators. In the winter season, they migrate with their herds to the Shivalik foothills, and in summer, higher altitudes. The High Court passed a judgment in 2007 February that the Van Gujjar issue should be settled according to the provisions of The Scheduled Tribes and Other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006, before which no eviction can take place. Women very a very strong part of this movement where they supported the leaders to retain their rights and even locked officers in police station to stop the action to be taken by police against one of their leaders. Women involvement is very evident in Gujjar communities and women have a closer association with nature in this community as they spend major amount of time in forest in collection of fuel wood, grazing and tending animals. It is for the first time that Forest Rights Act 2006 has recognized women role in forest after independence and granted equal ownership rights of women in the community and the individual forest rights.

Gujjars women and Environment

Gujjar women, in the settled communities are also hardworking women and are involved in various works at home from dairy to helping men in agricultural practices. Major part of their routine consists of taking care of animals regarding their feeding, bathing and milking of animals. The work they do make them exposed to environment at various levels. They are major support system in the major income generating work done by their respective families. But somewhere they do not recognise how important their role is for their family, their community and to the environment they are living in. This is because of the lack of exposure of women as they spend major part on their life in the home. To make the aware about themselves, their rights and how they can potentially contribute in making the environment better, for them and the future generations, educating them is the most important concern. Gujjar women, being from a particular community with patriarchal set up face dual backwardness in terms of realisation of their potential and importance of work they do to the surroundings in the longer run. In Gujjar society where the majority of men folk are literate but educating girls is a recent phenomenon. Though girls have started attending schools now but majority of middle aged women are illiterate or less

educated. These women are active manager of managing, household, rearing children and managing animals. Education and proper sensitization can really help in diverse areas in lives of women, which has linkages with the environment. Higher education among is directly proportional to a better environment. Education for sustainable development, the lens through which this paper is founded strongly promotes gender and other forms of equity and social justice in education processes (UNESCO, 2005). Importance of gender roles is very important to realise as women in the family are involved in all the levels in the way family functions in the society at large.

## REVIEW OF LITERATURE

Education for sustainable environmental development both men and women as equal partners in programmes and plans for development (Tilbury 2011).  Women should also know about the environmental issues and how as a human being she can contribute to form a better environment. It is women's human right therefore to be fully engaged in community environment education. Education is the source of much needed transformation by bringing out the viewpoints and issues of the marginalized communities and women in particular so that participation at all levels can be insured (Wals and Keift 2010). It very important to increase the participation of women, a group that has been historically not been vocal about their views in most of them matters in the community gatherings. Education will be a step towards the attainment of women participation in holistic manner because education will empower women to take decision in the right direction. Research

has established that sustainable developments that do not promote full participation and empowerment of women and girls will not succeed (UNDP, 2012) yet available research suggest that such participation is low particularly among rural women (Dankelman, 2012). Many scholars have suggested that environment sustainability should have women involvement at grassroots level and particularly women because women have major role in educating and instilling awareness on sustainable development in children and other family members. By these communities can adjust to environmental problems in a better way. So educating women is the most important task to do especially the marginalized women. So Education is the key to environmental sustainability and women are the major players. Education will provide analytical power and voices to the marginalized. It will open the chance of community participation in dealing with community problems and will also strengthen gender equality, social justice and development.

During the informal Interaction with nomadic Gujjar women, it was inferred that they are totally dependent of animals for their living, in which women play a critical role from bathing animals, feeding animals, milking animals without any formal training. They do consult doctors, but for nomadic Gujjars, lack of education subjects them to potential health and other risks. They sometimes are not able to deal with animal's health issues which causes harm to animals. They were Muslim Gujjars families with 5-8 children each. Lack of education, marks ignorance towards family planning which causes burden on them.

Settled Gujjar women also help their families in dairy farming. They have started sending their daughters to school but they don't have any training in particular, which makes them vulnerable in many aspects. They have a better lifestyle but cultural practices somehow overpower the practical thinking which can exercises a negative effect on them and environment at times. So education is the practical solution specially with vulnerable groups like Gujjar women, which will have positive impact on their lives and environment.

**Significance of the Women Education for the society and Environmental Sustainability**

**1) Important for culturally sentimental communities:** The traditions followed by many communities are so deeply rooted in the people which sometimes impacts the rational thinking. Education helps to broaden the mind set by modifying our culture and traditions in better manner. E.g. overcoming certain superstitions which can affect the health of people in the community. Gujjars have special rituals during childbirth i.e. burning coal in mud pot to eliminate evil eye, which is kept in the room of new born which can somehow affect infant's lungs. Education can help to get rid of superstitions. It will enable them to make follow traditions more practically.

**2) Impart Knowledge**: Environmental and climatic change is a threat to our planet. People don't realize how they use and exploit natural resources like water, fuel, forests. Women especially are involved at man levels with this Interaction. Especially

Gujjar women (nomadic and settled) have a primary contact with nature. They are reproducing, rearing children, raising children and can very well pass their knowledge to their children who will deal with environmental issues in future. Ignorance and lack of knowledge will have a negative impact on the environment. Rearing of animals involves a lot of knowledge which can be achieved by proper education. Women who face the challenges at home if involved in policy formations, can lead to practical solutions.

**3) Individualisation & Decision Making:** Education gives an understanding of the self and make them realise their potential so that they can understand their rights, duties and make their lives better. Because of this, gender gap among men and women can be reduced when women become well informed and can actively participate in solution of problems, which in strengthen their family and society at large. They actively take decisions regarding the problems and challenges at various issues at societal and inter-personal level.

**4) Confidence & Adaptability:** It instils confidence among women so that they can adapt with changing generation It provides the strong confident level to live in middle of the society as independently / without any bodies help. It modifies the women / female life style in well manner.

**5) Empowering Women:** It provides the valuable flat-form for a woman / female to survive in the society and make decisions about their life pertaining to their dreams, aspirations etc. Gujjar women actively work in dairy sector which

is main practised profession among Gujjars. Education can help them to enhance their skill set and make most out of work they do and making sure that nature or environment is not harmed.

**6) Income Generation:** Education strengthens the women society to get jobs and other self-employment opportunities. Proper education will open more avenues for them to improve their overall status.

**7) Ensuring Participation in Social Issues:** It shows the correct path for social issues which hamper environment. Right education will make them realize ill effects of skewed sex ratio, and how can they take a stand within family for their reproductive rights, heinous crimes like female foeticide and infanticide. The need to the hour is to   to utilize the correct pattern of women power as what our healthy society requires. It is essential to achieve a social welfare as a reasonable society. It furnishes the enlightenment for the women civilization. It makes the society and environment balanced.

8) Sensitization regarding Environmental issues: It improves the ability to sense risks involved in day to day activities to self and environment. In case of nomadic Gujjars, right education will make sure that natural resources and animals are taken care of. In case to settled Gujjars practising agriculture and dairy farming, proper information and education will ensure meaningful involvement of women in right direction. It will equip women to deal with natural disaster and calamities in agriculture and with animals and how they can survive in such situations.
- There is very less involvement of women

in environmental issues from formal and traditional policy formulation, in spite of the fact that they are actively helping in dealing with problems. For women to deal with the environmental challenges, they need the access to available resources: financial credits, information, agricultural inputs, and energy saving technologies assistance. They should also have rights to land ownership if they may be the principal farmers.
- Gender is a major factor in saving environment and sustainable development The poor and vulnerable women suffer more as regards health, safety from environmental degradation and lack of access to clean water and adequate, affordable energy.  Gujjar women, like any other women, have role and responsibilities in rural areas in agricultural production, food preparation and water and fuel collection, animals Rearing which make them important partners positions them in building and implementing sound environmental policies. But for them to act in this regard, they need proper channel of information and education. However, investing in women is one of the most effective ways to advance sustainable development and deal with environmental problems. Hence, the diverse roles and needs of women must be recognized and addressed in programs ranging from rural development, environmental sustainability and urban renewal.

## CONCLUSION
Education is the key to influence human behaviours, attitudes and actions. Accordingly, this when women are educated, it impacts the society as women are the key players in family. Balanced

society requires the educated and aware citizens who will guide future generations to work for themselves, society and environment. Women, which constitute half of the world's human capital, are one of its most underutilized resources. Sustainable environment at national and global levels depends on women working as active labour force are properly educated and sensitized so that they can give a fruitful contribution towards society and environment. More aware women would help in checking out fertility rates, proper use of resources which will help in environment sustainability.

Gujjar women are one such section of women who are close to nature (vangujjars) and settled Gujjars practicing dairy farming, who do everything associated with the animals and farms. Proper education will empower them to use their knowledge to make positive changes in their lives and conserve the environment.

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# Role Of Civil Society Organizations (CSO's) In COVID-19: A Case Study Of Chandigarh.

Hitesh Kumar Gulati*

## ABSTRACT

*COVID-19 Pandemic is one of the unexpected biological disaster for which the countries across the globe were unprepared. Various strategies were being formulated to combat against the pandemic throughout the world. In India, it started with a nationwide lockdown from 22nd March 2020 with State Level and Union Territory level plans by the government including development of Social Distancing Norms, Quarantine Centres for Corona Positive Cases and PPE Kits for CORONA Warriors, etc.*

*The passion of COVID-19 Pandemic Warriors towards social action in the field during the times of crisis has supported the humanitarian crisis in full swing.*

*Many observations and experiences in this write-up are extracts from one of the Reports published on Municipal Corporation Chandigarh website by the name of "Combatting Corona Virus (COVID-19): A Case Study of Chandigarh". The entire write-up here is an articulation about the "**Role of Civil Society Organisations (CSO's) in COVID-19**" in various different section listed below as a Case Study of Chandigarh during COVID-19 crisis:*

- ☐   *COVID-19 Overview*
- ☐   *COVID-19 Chandigarh Scenario*
- ☐   *Commitment Towards Social Action during COVID-19*
- ☐   *Planning and Community Action Teams (CAT)*
- ☐   *Support under Corporate Social Responsibility (CSR)*
- ☐   *Ethics and Values during COVID-19*
- ☐   *Challenges versus Preparedness & Readiness for Future*

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***Keywords:*** *Civil Society, Pandemic, COVID-19*

## INTRODUCTION

Coronavirus disease (COVID-19) is an airborne High Consequence Infections Disease, which started spreading out from China in December 2019 causing serious respiratory diseases.

In January end, it was declared an epidemic "public health emergency of international concern". The focal point of the epidemic was firstly in Wuhan City, Hubei province but it quickly extended to all other provinces of China. **Soon after the outbreak outside of China**, 19 other countries across the globe also reported confirmed cases.

COVID-19 has been declared as a pandemic by World Health Organisation (WHO) & after starting from Wuhan in China, it

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has spread fast to almost all countries globally. At the outset, it is agreed that the expected spread of the infection of COVID-19 cannot be predicted due to uncertainties associated with the disease. If a contingency plan is to be made at the local level, the magnitude of the problems is to be defined to ascertain the arrangements to be made in health facilities including beds, oxygen & ventilator support, health care providers, logistics & food arrangements, etc. Hence some assessment regarding number of patients to be treated in various health facilities in worst case scenario needs to be made.

Right from the start of Janta Curfew on 22nd March 2020, Chandigarh city has been under lockdown through imposition of curfew. Various other measures like door-to-door home delivery of essential items, compulsory wearing of masks in public places, postponement of optional surgeries in government hospitals & measures of social distancing etc. have been taken by the administration to break the chain of infection.

Many bearers of COVID-19 do not show any symptoms of the disease & get cured due to self-immunity or many other reasons. Hence, there is likelihood that such individuals may not be tested at all as per procedure of testing because they have no travel history, no past of being in contact with the confirmed positive case and do not show any indicators.

**Glimpse of Local Scenario** - Confirmed and Death Cases, from 19th March 2020 to 31st May 2020.
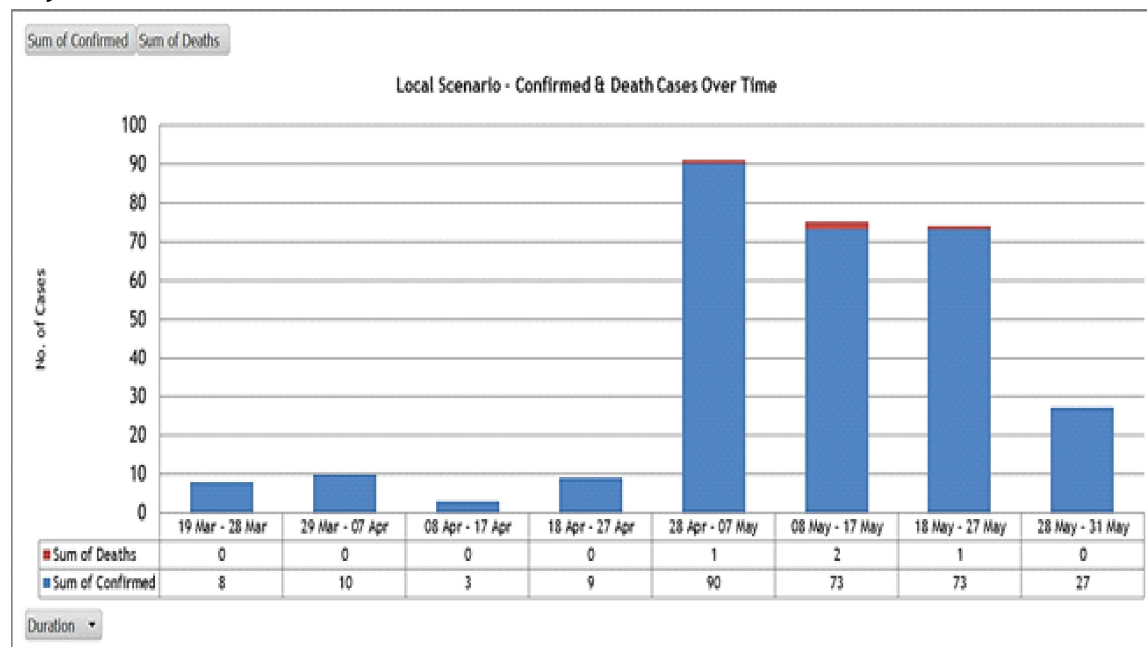


| | 19 Mar - 28 Mar | 29 Mar - 07 Apr | 08 Apr - 17 Apr | 18 Apr - 27 Apr | 28 Apr - 07 May | 08 May - 17 May | 18 May - 27 May | 28 May - 31 May |
|---|---|---|---|---|---|---|---|---|
| Sum of Deaths | 0 | 0 | 0 | 0 | 1 | 2 | 1 | 0 |
| Sum of Confirmed | 8 | 10 | 3 | 9 | 90 | 73 | 73 | 27 |

| | | | |
|---|---|---|---|
| **Confirmed Cases Over Time** | **293** | | **Date Source:** |
| **Death Cases Over Time** | **4** | | https://www.bing.com/ search?q=Coronavirus+trend+in+Chandigarh&filters |

| Local Scenario - Confirmed & Death Cases Over Time | | |
|---|---|---|
| **Duration** (Year 2020) | **Sum of Confirmed Cases** | **Sum of Death Cases** |
| **19 Mar - 28 Mar** | 8 | 0 |
| **29 Mar - 07 Apr** | 10 | 0 |
| **08 Apr - 17 Apr** | 3 | 0 |
| **18 Apr - 27 Apr** | 9 | 0 |
| **28 Apr - 07 May** | 90 | 1 |
| **08 May - 17 May** | 73 | 2 |
| **18 May - 27 May** | 73 | 1 |
| **28 May - 31 May** | 27 | 0 |
| **Grand Total** | **293** | **4** |

## CHANDIGARH A THREAT: WHY

The first case of COVID-19 in Chandigarh was first reported on 19th March 2020.



There are three major reasons for Chandigarh being a Threat:
1. Population Density;
2. Lack of Personal Protective Equipments (PPEs);
3. Impact on Economy

### 1. Population Density

In India a person is tested positive for corona for three reasons:
1. Foreign Return       2. Primary Contact
3. Secondary Contact
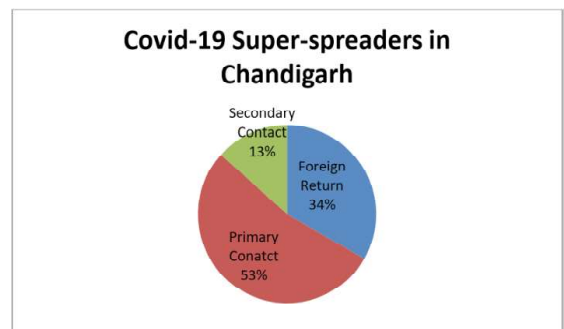


The figure here is the breakup of COVID-19 Cases found so far in Chandigarh as per their transmission.

Population density of any region has a great impact on the spread of COVID-19 due to primary and secondary contact. As data shown below, Chandigarh has the largest population density per ($Km^2$)

| Description | All India | Chandigarh | Punjab | Haryana |
|---|---|---|---|---|
| Density of Population–2011 Census (Km$^2$) | 464 | 9,258 | 551 | 573 |

Population density is the major threat for Chandigarh. As cases found so far in Chandigarh are through primary contact, and if we don't follow the social distancing rules, then it will become quite difficult to control this pandemic in Chandigarh.

## 1. Lack of Personal Protective Equipments (PPEs)

The threat is ambiguous due to the lack of sufficient personal protective equipment (PPE). The novel coronavirus epidemic will further deteriorate the frontline soldiers including doctors, nurses and hospital attendants in the government, civil and private hospitals besides the patients to go under remoteness or quarantine after getting infected with the virus.

## 2. Impact on Economy

More than 60% people in Chandigarh are migrants based on their previous place of residence. These migrants contribute largely to the economy of Chandigarh. Due to the impact of COVID-19, all these migrants have lost their source of income for e.g. Zomato, Swiggy delivery boys, Ola, Uber, Rapido, Jugnoo cab drivers, auto-rickshaw drivers have no source of income in the Tricity as of now. Apart from those even retail shops, restaurants, malls and theatres are closed during the lockdown period which definitely is going to impact their income. This has impacted the disposable income of every household which in turn has impacted their purchasing power.

## COMMITMENT TOWARDS SOCIAL ACTION DURING COVID-19

In Chandigarh Union Territory, the Civil Society Organisations (CSO's) came forward in conceiving **COVID-19 Pandemic Relief Campaign** during the lockdown in Chandigarh tri-city region. The CSO's planned and executed a 65 + days of sustainable campaign including awareness generation and sensitization of communities and volunteers on COVID-19 guidelines, identifying and engaging volunteers and relief distribution in addition to mobilization of resources from philanthropists, civil society, religious & youth organizations and corporates under Corporate Social Responsibility (CSR) for extending support to worst hit communities with essential commodities for living including food, hygiene related kits among **migrants, economic weaker** and **marginalized communities including women, children, Persons with Disabilities, Trans-genders, old aged,** etc.

The CSO's worked closely in convergence with Municipal Corporation Chandigarh and other departments of Chandigarh Administration under the patronage of Mayor and Municipal Commissioner Chandigarh to extend support and assistance to the urban poor including urban homeless living in slums, rehabilitation colonies and shelters in

the city. Since the day one of the lockdown, the association with limited volunteers extended full support in the awareness generation, distribution of day-to-day cooked meal and other commodities including personal hygiene kit.

## COMMUNITY ACTION FORCE (CAF)

The CSO's, partners and stakeholders in initial days of the lockdown prepared a roadmap to move on in devising following strategies to execute the campaign:

1. Developing understanding on COVID-19 Guidelines issued by WHO, Government of India and Union Territory of Chandigarh Administration.
2. Liaison with office of Local Government.
3. Virtual Training of Trainers (TOTs) on guidelines for the front line team members.
4. Need Assessment with the Urban Poverty Alleviation Unit of Local Government and Office of Mayor Chandigarh for planning and field mapping on awareness generation among marginalized communities, relief distribution, counselling etc.
5. Resource Mapping and Mobilization for accessing relief support for marginalized communities under Corporate Support Responsibility (CSR) from corporates and industries.
6. Identification and Networking with Grass Root Organizations including Area Level Federation, Youth Organizations, Resident Welfare Associations, Local Philanthropists for acquiring essential commodities from communities for distribution.
7. Identifying and Adopting Marginalized communities for sustenance.
8. Assistance in evacuation for easy access to transport in reaching their homes with concerned departments.
9. Organizing Virtual Dialogues on various social issues pertaining to COVID-19.
10. Gaining support from Local Mass Media.
11. Recognition to Volunteers and Members for building motivation for others join in relief services amid fear.
12. Process Documentation & Report Writing of Best Practices.

## CSR CARE

The Association of Professional Social Workers and Development Practitioners (APSWDP), a think tank and network of social work and development practitioners mobilized support under Corporate Social Responsibility (CSR) through various corporate and industrial federations in the region including Federation of Indian Chambers of Commerce & Industry (FICCI). FICCI mobilized relief distribution material from various industrial houses including:

## DABUR INDIA LTD.

Dabur India Ltd. under Corporate Social Responsibility (CSR) extended support in providing beverages including Coconut drinks, REAL preserved Juices, Dabur Chavyanprash and Honey for distribution among poor, economic weaker sections and marginalized communities to supplement them with immunity boosters as guided by Ministry of AYUSH. Approximate 6000 persons were outreached and given juices and 1500 families were distributed Dabur Chavyanprash along with Honey.

## COCA-COLA INDIA LTD.

Coca-Cola India Ltd. under Corporate Social Responsibility (CSR) extended support in providing cold summer beverages including Soft Drink and Bottled Drinking Water for distribution among poor, economic weaker sections and marginalized communities to supplement them with their basic needs during lockdown.

**Marico Ltd.** Marico Ltd. under Corporate Social Responsibility (CSR) extended support in providing Dry Oat Meals, Cooking Oil, Hair Oil, Health Veg Soups and ready to Eat Meals for distribution among poor, economic weaker sections, marginalized communities, migrant labours and their families on the highways to supplement them with their basic needs during lockdown.

## INTEGRAL CONVERGENCE WITH OTHER STAKEHOLDERS

Since the day one of the lockdown, the CSO's with the support from DAY-NULM Cell, Chandigarh extended full support in the distribution of day-to-day cooked meal and other necessary commodities including personal hygiene kit.

The following initiatives were taken by the CSO's with support from Municipal Corporation Chandigarh:

- More than **15000 cloth based masks** manufactured by women were mobilized free of cost from Skill Training Providers and distributed among urban homeless families living in shelters in different location of Chandigarh, EWS colonies, slum areas, jhuggis and urban villages, etc.

- **2500 Nestle Cerelac** worth approximate Rs. 5.00 lacs procured by Municipal Corporation Chandigarh, for children upto 24 months have been distributed by the volunteers of the association in 10 temporary shelters, rehabilitated/slum colonies, jhuggis, EWS Colonies, etc.

- **1.5 tonnes** of Dabur Chawanprash including Dabur Honey was mobilized by the CSO's under Corporate Social Responsibility (CSR) through Dabur India Limited, for distribution among 10 shelters for urban homeless, slums, rehabilitated colonies, registered street vendors, rickshaw pullers, beggars & daily wagers, etc living and stranded in the city.

- **23,664 packets (900 kg)** of Saffola Dry Oat Meals were distributed in lodgings for city homeless, slums, jhuggis, Economically Weaker Sections, outside hospitals etc. mobilized by the CSO's from CSR division of Marico Limited felicitated by FICCI, Chandigarh.

- **1500 packets of personal hygiene kits** were provided by Sai Sewa Trust, Chandigarh through Commissioner, Municipal Corporation Chandigarh and were distributed among migrants traveling to their native places in Shramik Express and Safai Karamcharis of Municipal Corporation Chandigarh.

- **600 families were extended full support** during the entire lockdown time during the COVID-19 pandemic with periodic dry ration, provided by Resident Welfare Associations, Chandigarh, Swarmani Youth Welfare Association (SYWA), & officers of Municipal Corporation Chandigarh.

- **Pencils, Stationery, Crayons,**

**Biscuits** specially mobilized from Civil Society Organization were distributed among children for engaging them at their homes during quarantine.

• Dedicated Young Volunteers were engaged for providing assistance during COVID-19 pandemic as a part of Solidarity Response Relief Campaign, supported by **Para-Legal Volunteers** of **State Legal Services Authority (SLSA)**, Civil Society Organizations and others.

The CSO's with support from DAY-NULM Cell of Municipal Corporation Chandigarh and other partner organisations during COVID-19 pandemic has covered diverse demography of population in the city including children, adolescent, youth, women, person with disabilities, transgender and old aged people.



## Corporate Social Responsibility (CSR) and other social support raised during COVID-19 Pandemic

**Quantity of Relief Distribution (in Kgs)**
60 200 200 1100 1500
■ Dry Oats ■ Chawanprash ■ Honey ■ Potatoes ■ Onion

**Quantity of Relief Distribution (in Litres)**
200 100 200 613 665
■ Real Juices ■ Coconut Water ■ Coke Sparkle ■ Hair Oil ■ Cooking Oil

**Quantity of Relief Distribution (in pcs)**
500 300 300 1000 700 1000 1000 1000 500 6000
■ Dettol Soap Bar
■ Savalon liquid
■ Cloth Face Mask
■ Hand Sanitizer (small bottles)
■ Pencil Colours
■ Pencils
■ Biscuits for children
■ Protein rich packets
■ Distilled Water
■ Sanitary Pads

## VALUES

The Pandemic of 2020 has made the world run helter-skelter. A never seen phenomenon for the current population, ethical decision making has become a big area of debate during COVID-19. The priorities of ethical values have had to change to tackle the issues caused by the spread of this virus.

The World Health Organization has therefore recommended that the following ethical values must be prioritized to make decisions during COVID-19:

1.  **Transparency:**   The population must be aware of the criteria for decisions
2.  **Inclusiveness:**   The decisions should be potentially revisable and open to changes
3.  **Consistency:**   All individuals in the same category must be treated consistently
4.  **Accountability:** Those making the decisions must be held accountable.

Perhaps the biggest issue faced by most countries recently is resource allocation and prioritization for best population recovery. The World Health Organization recommends that the resources are allocated equally to ensure they derive the same benefits, to make sure that they provide the best utility, that they prioritize those who are worse off and prioritize those tasked with helping others.

Nevertheless, there are several ethical dilemmas that exist due to this pandemic despite the governments trying to follow the above-mentioned values.

Freedom has always been one of the highest prioritized ethical values in the past. However, in order to curb the spread of COVID-19, the governments of countries across the world have had to restrict not only movement across countries and states, but also confine the population to their own home. This decision greatly infringes on the right to freedom that is a considered a constitutional right in a great majority of the countries.

Another question that this pandemic brings is whether it is ethical to release the personal information of patients of COVID-19. Doctor-patient confidentiality used to be a legal aspect of the healthcare industry, but with the number of positive cases growing exponentially, the healthcare industry has had to release this information to invoke caution in the population's minds.

While transparency has been strongly recommended by the World Health Organization, many countries are partaking in censorship to not reveal the extent to which COVID-19 has impacted them. While they may state 'avoidance of panic' as a reason for this censorship, the fact remains that, with the severity of this virus, it is preferred that panic creates vigilance in the population.

While these may be just some of the ethical issues caused by COVID-19, it shows how the actions must adapt to the unexpected changes occurring and that sometimes there are some ethical values that must be given priority over others to ensure a healthier society.

## CHALLENGES VERSUS ROADMAP FOR FUTURE

The Civil Society Organisations (CSO's) despite following various challenges and limitations, has taken a giant and gradual leap in combating COVID-19 crisis in the city by involving various stakeholders, mapping and mobilization of resources and continuous monitoring:

| Sr. No. | CHALLENGES | PREPAREDNESS AND READINESS |
|---|---|---|
| 1 | Most of the CSO's deals with promotion of social work education for sustainable development through capacity building & training, advocacy, linkages, research and development of models.<br><br>In case of COVID-19 pandemic the CSO's were not ready, equipped and trained to deal with such biological disaster. | The CSO's since the Lockdown and Curfew planned & roped in Members and Volunteers of different backgrounds and expertise to deal with day-to-day pandemic situation with support from the local government. In future, CSO's should identify the team of humanitarians, more local & global organisations, who can manage pandemic situations based on their proficiencies. |
| 2 | During the country-wide lockdown and Curfew at Chandigarh, it was very difficult to provide non-stop support and conducting community based need assessment of required commodities like milk, vegetables, fruits, and groceries and other basic services including health and counseling, etc. | The CSO's in future should develop a Database Management System comprising of Local Counselors with local government in several provinces including Suicides, Native Violence, Stress, etc. and social workers proficient in development, administration, resource deployment, community action, etc. |
| 3 | Technology centric mechanisms and resources were not readily available for monitoring, evaluation and solutions to deal with the pandemic situation in various sectors/ villages of the city. | The CSO's should look forward to introduce available IT based applications for volunteer/ member engagements, mapping, mobilization of resources and monitoring. |
| 4 | Finances to deal with COVID-19 Pandemic | Most of the CSO's are Membership based Not for Profit Organisation, which works on various small grants, donations from members & CSR support in kind. In future, the CSO's should work on generating Funds through online fundraising tools for specific social support. |

| 5 | Relief Distribution to Economically Weaker Sections (EWS), Marginalised Community including Stranded Migrant Labour, Person with Disabilities, Transgender, Senior Citizens | Relief Distribution was coordinated by Community Action Teams (CAT's) of CSO's under guidance & mentorship of the local government. The onsite distribution was managed by three CAT's with support of Civil Society Organizations (CSO's) & volunteers with their deployment on ground. Regular communication with COVID-19 CAT was ensuring the non-stop supply of required items from corporates/ industries through CSR. The relief distribution includes essential items like tent, medications, clothes, nutrition items, soaps, items of special needs for pregnant women's as well as children, disabled/ injured & old aged. |
|---|---|---|
| 6 | Relief Transport Management | The CSO's with the help of local government coordinated the transportation of relief materials mobilized from CSR companies for distribution at local level. The association can tie-up with local transport associations for mobilizing transport support in case of pandemic situation on voluntary basis. |
| 7 | Risk Awareness and Communication | Addressed the mass communities with other departments including Development Cell (DAY-NULM and Street Vendors Cell) for creating public awareness on prevention of spread of Novel Corona Virus, duties of the citizens during crisis, engaging print and digital media for publishing positive, influential and motivating stories of members & volunteers as COVID-19 Warriors. |
| 8 | Capacity-Building in Disaster Management | The prime drive of capacity-building in COVID-19 pandemic is to reduce threat and thus make communities safer by building resilience and enhancing |

| | | |
|---|---|---|
| | | surviving capacities. In future, an inclusive Disaster Management Plan in convergence with government, non-government entities, and international bodies will ensure the capacity-building activities and fight back mechanism for knowledge and TOT's. |
| 9 | Vision of having futuristic Conferences/ Workshops/ Webinars on Post COVID-19 pandemic | Post COVID-19 pandemic discussions/ workshops/ webinars should be scheduled with support from CSO's for future preparedness. |
| 10 | Vision of having futuristic Conferences/ Workshops/ Webinars on Post COVID-19 pandemic | Post COVID-19 pandemic conferences/ workshops/ webinars should be planned with support from CSO's for future preparedness. |

Every pandemic comes with some unpredicted and unbelievable troubles and the response to such situations always leads to advancing of greater vision and assessment of better solutions for futuristic crisis. Such learnings and experiences will work as benchmarks in planning and organizing capacity building and training programmes for preparedness.

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# E-waste And Public Health: A Critical Review In The Context Of Sustainable Development Goals

Pranav Kshtriya*, Rajeev Kumar Chaudhary**

## ABSTRACT

*The article discusses the relationship between electronic waste (e-waste) and the Sustainable Development Goals (SDGs). It highlights the negative environmental, economic, and social impacts of e-waste and how it hinders progress towards achieving the SDGs. Improper disposal and management of e-waste lead to contamination of land, water, air, and hazardous materials, which directly affects several SDGs, including Goal 3 (Good Health and Well-being), Goal 6 (Clean Water and Sanitation), Goal 11 (Sustainable Cities and Communities), and Goal 12 (Responsible Consumption and Production). E-waste also has economic and social implications, particularly for Goal 8 (Decent Work and Economic Growth) and Goal 10 (Reduced Inequality), as it endangers informal workers involved in hazardous recycling and hampers the establishment of a circular economy. To address these issues, a multifaceted strategy involving governments, companies, academia, and civil society is needed. Strict regulation of e-waste management and disposal is necessary to promote sustainable practices. Industry stakeholders should focus on eco-design and recycling to encourage responsible consumption and reduce the environmental impact of electronic devices. Public education on e-waste disposal is also crucial, aligning with Goal 4 (Quality Education) and Goal 13 (Climate Action). The article emphasizes the increasing global e-waste stream, with 20 to 50 million tons generated annually. It highlights the importance of design for the environment, extended producer responsibility, recycling, and remanufacturing in managing e-waste. Insufficient e-waste management can lead to environmental pollution and harm human health, including immune system damage and heavy metal exposure.*

*Keywords: E-Waste, Sustainable Development Goals (SDGs), Public Health, Electronic Waste Management*

## INTRODUCTION

The growing use and reliance on electronic and electrical equipment due to lifestyle changes and industrialization, as well as the electronic and ICT industry's ever-increasing accomplishments and scientific innovation, has created a new but dangerous waste stream called "electronic-waste."(1–7) "E-waste, today, is a more than $7 billion industry" and one of the fastest-growing waste streams, resulting in environmental and public health issues. (1,2,8–12) While there is still disagreement on how to effectively

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handle existing items, new product types are growing, such as smart textiles or electric automobiles, which may soon be considered e-waste. (13) E-waste is made from expensive, reliable equipment used in telecommunications, data processing, managing, administering, and entertainment in households and businesses.(14)

"Electronic waste or e-waste is the term used to describe old, end-of-life electronic appliances which have been disposed by their original users".(15) "Grossly they are loosely discarded, surplus, obsolete, broken, electronic devices"(4,8,13) "E-waste may be described as waste electrical and electronic equipment, in whole or in part from their manufacturing and repair process, which are intended for disposal (E-Waste Rules, 2011)."(16)

"E-waste is  mainly classified into 3 categories i.e., White Goods (large household or domestic appliances,  such as air conditioners, driers, washing machines, freezers, refrigerators, stoves ovens), Grey  Goods (information and communication appliances, such as CD-ROM, disk drivers, computers, Liquid Crystal Display (LCD) monitors, keyboards, mouse, typewriters, telecommunications equipment, telephone, fax, modems, pager) and Brown Goods (audio or visual appliances, such as television, mobile phones camera, sound equipment, recorders, and projectors)".Due to the toxic make-up of grey goods, they are more relatively more multifaceted to recycle.(15,17)

E-waste has been classified into 3 chief categories(15)

| Large Household | IT & telecom Appliances | Consumer Equipment |
|---|---|---|
| Refrigerator | PC & laptop | TV |
| washing  machine | Monitor | —- |

**Table No 1. 1: Classification of E-waste**

It includes items like used & damaged & discarded, which have become outdated & which have disposed by their prime users come in the group of E-waste. (5,7,9,10,13,15)

| PCs & its accessories | monitors | headphones | mother boards | printer cartridges |
|---|---|---|---|---|
| typewriters | telephones | printers | CPU | batteries |
| electronic toys | keyboards, | AC remotes | pen drives | notebook computers |
| LCD/Plasma TVs | refrigerators | compact discs | CRT | PCB |
| Smart Phones | Chargers | game devices | audio players | Video players |

**Table No 1. 2: List of discarded electronic equipment that comes in the group of E-waste**

# GLOBAL BURDEN OF E-WASTE

"50 million ton of E-waste is being generated globally/year"(2,4). Average growth rate of E-waste generation for the whole world is 3-5% per year.(17) In terms of production of obsolete PCs by the year 2030, As compared to developed nation, in LMIC & LIC countries it will be doubled.(12) E-waste gathers nearly 3 times quicker than other waste.(18) "The above all denotes that there is a need from research, scientific communities and policy makers of developing nations to consider instantly the problem of how to tackle the burden of e-waste in a very satisfactorily way.(12) Moreover, There are estimated "2.3 million occupational-related mortality & work-related injuries & illnesses" annually worldwide with considerable economic costs to GDP.(19) The worldwide E-waste generation (17–20)

| YEAR | Million Tons (Mt) |
|------|-------------------|
| 2012 | 45.6 |
| 2014 | 41.8 |
| 2015 | 43.8 |
| 2016 | 44.7 |
| 2018 | 48.5 |
| 2019 | 53.6 |

**Table No 1. 4: Worldwide E-waste generation**

Burden of E-waste in India
India may heap up nearly 2.0 MT of e – wastes by 2025.(5,21) India is responsible for roughly 4% of e-waste generated per year.(20) India is the fifth major producer of e-waste in the world(20) & the 2nd principal producer of mobile phones in the world. (17)About 70% of the e-waste is added by 10 states & 65 cities in India. Maharashtra (19.8 %) creates the most waste from EEE in the country. Only 5% of e-waste in our country is recycled that is only around 4 lakh TPA as compared to production rate of 2 MT.(8,9) India has seen enormous upsurge in the burden of e-waste which has added a complexity to the current domestic solid waste management which is already an enormous task of achieving.(14) "The expected growth for e-waste production for India is about 34% /year."(15)

Estimation of E-waste generations (1,10,17,19,20,22,23)

Table No 1. 5: Summary of estimates of e-waste generated in India

| Year | E-waste generated |
|------|-------------------|
| 2003 | 1.38 lakh tons/y |
| 2005 | 1.46 lakh tons/y |
| 2007 | 3.8 lakh |
| 2009 | 4.74 lakh tons/y |
| 2012 | 8 lakh tons/y |
| 2013 | 400,000 tons/y |
| 2014 | 1.7 million tons |
| 2015 | 4.1Mt |
| 2016 | 2.7 million tonnes |

Obsolescence of e-wastes can be categorized in "Natural obsolescence: is the process of obsolescence in which the electronic item is discarded at the end of its useful life. Natural obsolescence is

generally adopted for the disposal of electronic items at the personal level."(23) "Planned obsolescence: is the process of obsolescence in which electronic items like computers, printers, etc. are discarded after a specific period of time, i.e., 2 to 5 years, which is predefined as its useful life period. In planned obsolescence, the electronic items are discarded after the specified period regardless of whether it has reached the end of its useful life or not. Planned obsolescence is generally adopted for electronic items used in institutions or offices, large organizations, etc."(23)

## PECULIARITIES OF E-WASTE

E-waste comprises >1,000 substances, which can be differentiated as hazardous & non-hazardous substances in total form a complicated structure & design.(14,17) Up to 60 elements can be found in complex electronics. "E-waste is more hazardous than municipal waste."(23) Overall, 70% of informed toxic & hazardous chemicals in the environment today come from e-waste(18).

Deadly chemicals and metals, numerous xenobiotic compounds & persistent organic pollutants found in E waste are (1,2,5–11,16–19,21–24)

| | | |
|---|---|---|
| Hexavalent Chromium [Cr (VI)] | Chromium | Phthalates |
| Polyvinyl chlorides (PVC) | Cadmium | Barium (Ba) |
| Brominated flame retardants Toxic gases | Zinc (Zn) | Plastic pollutants & |
| Polybrominated biphenyls (PBBs) | Arsenic (As) | Lead & Cobalt |
| Polychlorinated Biphenyl (PCBs), | Mercury | Antimony |
| Polybrominated diphenyl ethers (PBDEs) | Beryllium | Nonylphenol |
| Polycyclic Aromatic Hydrocarbons (PAH) | Selenium (Se) | lithium (Li) |

**Table No 1. 6: List of deadly chemicals and metals, numerous xenobiotic compounds & persistent organic pollutants found in E waste.**

E-waste is also an amusing stream of perilous raw materials, valuable & scarce materials too(21,22) Valuable elements found in LHA & SHA is listed below(17,22)

| | |
|---|---|
| Aluminium (Al) | Cobalt (Co) |
| Germanium (Gr) | Copper (Cu) |
| Manganese (Mn) | Iron (Fe) |
| Nickel (Ni) | Indium (In) |
| Tin (Sn) | Gallium (Ga) |

**Table No 1. 7: List of valuable & scarce materials found in e-waste.**

E waste is good supply of copper, silver, gold, platinum which are highly existing in gadgets used for ICT & can be recycled & brought back into the manufacturing cycle.(5,6,8,11,22,23) "A ton of e-waste has 340 g of gold & 3500 g of silver. One LCD TV contains 520 mg silver, 200 mg gold and 40 mg of palladium. Several authors have discussed the harmful methods of treating e-waste in India, such as open burning, dismantling, removal of copper yoke, open landfills, crushing, acid leaching, incineration, and others, which can cause air, water, and land pollution, toxic and carcinogenic contaminants, and more. They have even discussed the contaminates in e-waste, such as lead, mercury, BFR, phosphorous, Dioxin and Furans, Nickel, chromium, and many other toxic & carcinogenic heavy metals and other elements that are released into the environment or treated without proper PPE can cause renal toxicity, muscle tumours, chronic brain damage, and system damage.(5,7,11,14,17)

E-waste management systems in India
E-waste in India comes from two sources: foreign garbage and domestic waste. Institutions, administrative buildings, small and big businesses, secondary markets of obsolete PCs, individual families, PC shops, and manufacturers create indigenous garbage in India.(7) Informal Recycling unpopularly known as "Backyard Recycling" in India. India is at risk as a messy province because 95% of its informal recycling is run by small and informal businesses involving "vendors, scrap dealers, dismantlers, and recyclers" and employing thousands of disadvantaged people in municipal and semi-urban areas. (16,17,20,22,23) "The collection of waste is done by several waste collectors known as "Kabadiwalas" or scrap dealers from the households" & pay clients a price for their obsolete electronics. they purchase & retail it to contractors & traders. (17,22)

Untrained migrants from states like Orissa, UP & Bihar are mostly employed by informal sector. (20) Out of which majority of informal e-waste laborers are females, men & kids from BPL or lower socio-economic status, residents of urban slum area. (20) E-waste is also a basis of income generation for many stakeholders as it is a rich supply of valuable as well as reusable materials. (15) Over 10 lakh underprivileged individuals in our country are tangled in the recycling procedures which they have to carried out manually. (17)

Informal recycling is tangled in the "collection, transportation, processing, segregation, repairing, refurbishing and dismantling in an informal way illegal", unsafe & unauthorized & it is not overseen by any strict health & environmental principles. (13,16,20,21) Complete Procedure is handled with bare hands & is completed manually by manual worker. (8,15,20) Poorly literate & unschooled labourers, lacking the rudimentary facts regarding the grave occupational & health risks related & also dearth technical & infrastructural skills put their health at jeopardy with straight exposure to e-waste to make their source of revenue & there is infrequent usage of PPE, they often undervalue the health risks linked with their profession. (15–17,20,21) Most frequently, the rejected electronic belongings lastly end-up in

landfills which are not well prepared to manage such waste, sideways with other urban waste or are burnt openly liberating poisonous & cancer-causing ingredients into the air. (16,23). In our country it has been realized that there is need of appropriate e-waste management, solid waste management has also become a complicated task due to emergence of WEE. (7)

The method followed by these recyclers is (7,13,15,16,20,23)

| |
|---|
| Collection ("breakage of the substances due to mishandling switches & light sources cause the release of hazardous substances") |
| Shredding ("emissions, such as organic compounds and metals") |
| open burning and backyard recycling |
| Product reuse |
| Refurbish |
| Conventional disposal in landfills |
| Open & manual dismantling (CRT glass, LCD, lead to toxic emission) |
| Acid leaching and uncontrolled dumping |
| Burning, incineration |
| Use of toxic solders |

**Table No 1. 8: Methods adopted in Informal sector**

Among most of Indian cities No special consideration is given to handling, collection, dismantling as well as recycling of E-waste & it is considered under municipal waste & it has its own legal reasons, as well as infrastructural and socioeconomic reasons. (15)

Refurbishing WEEE in our country is a source of livelihood & income to 1000s of workers & kabadiwalas. Major obstacle for policy makers is the possibility of the EPR arrangements can lead to collapse of secondary markets. (23) E-waste (Management) Rules, 2016 focus on EPR, but effective implementation is still lacking. For example, Indian consumers prefer to sell their outdated WEEEs to kabadiwalas due to financial incentives, whereas producers pay a "Extended Producers Responsibility (EPR)" and customers pay a "Advanced Recycling/ Disposal Fee". (18,23)

Only limited private establishments have newly initiated commercial collection of E-waste & is at early stages. In south India there is only 2 cities like Bangalore

& Chennai where the formal recycling hub is present & none of them present in north-east India. (21). There is need to handle and treat e-waste in more environmental-friendly, sustainable & scientific method in our country but only 3 cities such as Chennai, Noida, & Bangalore only incorporate this practice in our country. (15) E-Parisaraa Pvt. Ltd is the pioneer government regulated & controlled recycling hub in our country started in the year 2005 is well-known for its management of WEEE in eco-friendly way. (9) "Still, India does not have a 1 full-grown unit proficient of extracting valuable metals from e-waste." (9) Currently no industries and establishment or manufacturers have enough capabilities to handle all waste appropriately (16)

**Table No 1. 9: List of problem faced by formal sector of India (21)**

| |
|---|
| Absence of appropriate collection & disposal procedures & proper technologies |
| Large and enormous informal sector |
| It also needs refineries for valuable metals retrieval |
| Indian formal sector is successful in only covering and collecting a small volume of WEEE. |
| They only carry out procedures such as Segregation & Dismantling of e-waste |
| Informal sector is given the task of recycling & final disposal. |

## DUMPING OF E-WASTE FROM GLOBAL NORTH TO GLOBAL SOUTH

Poor countries that cannot afford new electronics but must compete with the world of flourishing EEE imports E-waste from industrialized countries or from abroad, and developed nations can disguise the export under the guise of donation or trade free of custom duties. They can also direct e-waste illegitimately to LMIC & LIC, which further complicates the issue. (1,7,8,19) Due to this it is expected that Industrialized countries will be having upsurge in their respective cleaner environment & climate by spending cost by underdeveloped nation which will have risen in dirtier environment, the quantity of e-waste exported will increase, As a culture of consumerism flourishes.(19) India also receives majority of dumped e-waste from high income group due to illegal imports mainly PC waste "green passport", at the same time we have our own domestic burden of e-waste which is constantly rising which has further added to the problem of E-waste management.(3,6,17,21,23,24). Country also receives the partly obsolete & scrap gadgets, such as (7,17)

| Projectors | CPU's |
|---|---|
| Typewriters | mobile phones |
| printers | PVC wires |
| keyboards | monitors |
| PC scraps | Computer Notebooks |

**Table No 1. 10: List of dumping partly obsolete & scrap gadgets illegally**

Around 4/5th of the e-waste finds its way to LMIC and LIC such as India, Pakistan, Bhutan & Nepal & Nigeria, Kenya etc. from developed country in spite of "prohibition on trans-boundary movement of hazardous waste" (5,13,20). In our country cities like Madras, Hyderabad, national capital, & in west Ahmedabad receives large volume from developed nations. (13) "Basel Action Network (BAN) stated in a report that majority of it is exported by US (7,11)." The precise extent of the e-waste cannot be established because there is no consistent parameter to evaluate how much of e-waste is created & is imported to India. (7) As per "Directorate General of Foreign Trade estimates, annually around 50,000 tons of e-waste is dumped in India by other countries but the figures are much higher which mostly end up in informal recycling yards either immediately or once the re-used product is discarded" & The e-waste policy is unsuccessful to prevent it. (9,13,16,17)

1)Cheap labour 2) absence of environmental standards & occupational standards 3) Insufficient recycling infrastructures 4) the likelihood of environmental pollution in the developed countries 5) lenient environmental laws in the developing nations 6) Incredible escalation in the price of handling & treatment of harmful waste, the exercise of illegal swapping began at the cheaper costs in industrializing nations 7) The "US is the only industrialized country that has not signed the UN Basel Convention, which bans the export of hazardous waste to industrializing nations." 8) To escape from the Basal Convention, greedy establishments of Industrialized nation will try to cover export of both functioning & non-functioning e-waste to LMIC & LIC countries under the reason such as "It's a donation of obsolete electronics"9) Regulated & Recognized e-waste recycling, which requires hi-tech facilities to without harm extract salvageable constituents, is costly to install.10) Lower Processing Cost (5,7,13,16,18,19,21,22) Despite India being a member state of the "Basel Convention for Transboundary Movement of Hazardous Substances", there has been a surge in such imports in the lack of proper import controls. (23) "India's EXIM (export-import) policy" permits import of the second-hand computers not >10 years old. "The Foreign Trade (Development and Regulation) Act, 1992," "offers for import of computers & peripherals from zones which have been set up principally

for export, i.e., EOU (Export-Oriented Units), EPZ (Exports Processing Zones), STP (Software Technology Parks) and EHTP (Electronics Hardware Technology Parks) at a zero-custom duty". These computers can be donated to the

| 1) Public-funded research & development institutions & organisations |
|---|
| 2) Recognised non-commercial educational organizations |
| 3) Charitable Hospitals |
| 4) Public libraries |

## CONCLUSION

The worldwide E-waste Monitor 2020 predicts 74.7 Mt of worldwide e-waste by 2030 due to greater energy and electronic use, shorter lifecycles, and restricted repair alternatives. E-waste, one of the main sources of contaminants in municipal garbage and a secondary source of precious minerals and metals, is recycled and disposed of. Proper "e-waste mining" may help the circular economy and sustainable development by reducing natural resource strain, landfill space, and pollutant emissions. However, poorly handled heavy metals and persistent organic pollutants may be redistributed, bioaccumulated, and biomagnified, producing health issues and air, water, and soil pollution. The e-waste issue has garnered global attention. Better knowledge and management of e-waste might help accomplish SDGs 3, 6, 8, 11, 12, and 14 in the 2030 Agenda for Sustainable Development. The EPR, RoHS, StEP, and 3Rs have been introduced to help improve recycling infrastructures and technologies, policies and legal instruments, and low-carbon producer and consumer habits. Global e-waste management has various financial, technical, regulatory, and administrative obstacles. According to literature and field studies, developed economies with established waste management systems are struggling with e-waste's complexity, while developing economies need effective laws and strategies to promote formal e-waste management. Thus, policymakers and practitioners must discover ways to overcome e-waste hurdles and difficulties for sustainable management.

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# Understanding Street Vending, Policy, Street Vending Act 2014, Its Implementation And Mechanism For Strengthening Governance In The Urban Informal Sector: Experiences From Chandigarh

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## ABSTRACT

*This paper is an attempt to comprehend various facets of street vending, and study the degree of implementation of provisions of the Street Vendors (Protection of Livelihood and Regulation of Street Vending) Act, 2014 within the legal framework of the compliance index of Street Vendors Act and recognize the work undertaken at Chandigarh and Shimla under Street Vending Plan. It also highlights the classification of street vendors, street vending zones, sub-sets of stationary street vendors, street vending scenarios prior to and after the survey, innovative initiatives encompassing e-governance to bring transparency and ease to street vendors, Management Information System (MIS) and reducing physical discretion in the functioning. The article also analyses the status of implementation of provisions of the Street Vendors Act, 2014, and puts forth policy recommendations and suggestions to strengthen the work undertaken and the work yet to get initiated in the future and in bringing convergence with the other agencies in transforming the street vending scenario.*

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*Key Words: Informal Sector, Street Vending, Informal Economy, Street Entrepreneurs, Livelihood, Migrants.*

## BACKGROUND

Street Vendors are the most noticeable segment of the informal economy (NIDAN, 2010). They establish a significant section at the bottom of the pyramid of the informal sector in cities (Source: Support to Urban Street Vendors – Revised Operational Guidelines, 2018). Street Vending is a centuries-old profession, and many urban poor had their reliance on it (Source: National Association of Street Vendors of India). Due to poverty, lack of employment opportunities, and poor income gains, most of them aspire to migrate to cities to earn their livelihoods (Bhatt, 2018). However, expecting better pay remains difficult for them

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due to their low level of education and further low skills making their struggle more grueling. Even those having the capabilities can't discover work due to their status as migrants. Besides, many local street vendors are in the same row due to a lack of employment opportunities, requisite education, and technical skills. Henceforth, the majority of such individuals opt for street vending (also known as hawking) as one of the means of earning their livelihood since it requires less capital, no requirement of skills and entry is free.

Street Vending is worldwide, exclusively in developing countries (Bhowmik, 2012). Though, there has been a broad tendency to decrease the activities of street vendors as an annoyance in the urban environment (Njaya, 2016). Street vendors frequently face aggravation and random constraints from municipal authorities. They also work in threatening environments without rudimentary infrastructure and services (Kumari, 2016). Street vendors are beleaguered and in certain cases attacked and their goods are impounded by city authorities (Mkhize, 2013). This adverse sensitivity of street vendors has caused clashes with municipal authorities over licensing, taxation, site of operation, sanitation, and working conditions (Hasam, 2015).

They offer low-cost elementary goods and foodstuffs to other poorer groups in the cities. Subsequently the late 1990s, after the collapse of banks and commerce entities due to the Asian economic crisis, hawking has played a vital role by becoming a surviving instrument for low-income families in the city of Surakarta. In spite of their vital role in the economy, street vendors endure struggle at the brims of the economy as quoted by Dube and Chirisa in their research of 2012. Failure to distinguish street vendors as street businesspersons with the possibility to make income has caused in the loss of possible income from street vending license fees, and taxes since the street hawkers continue to function without licenses.

## HISTORICAL BACKGROUND

Vending on the streets has been in presence since primeval times. Historical indications also give explanations of the dealers who have been peripatetic and who not only traded their merchandise in the towns by roaming from house to house but they also operated in the bordering states. They embellish the areas that are widespread flocks of the general public. They also line up near railway stations, along with busy shopping streets, and housing complexes, in front of spiritual places, and major sports and entertaining epicenters.

Marketplaces, lanes, roads, and stations are the other extremely jammed places where the street vendors sell their products. (Source: NASVI available at http://nasvinet.org/newsite/overview-of-street-vendors-a-little-history/).

During the period of Renaissance in Turkey, numerous intersection had vendors vending "sweet-smelling bites of hot meat", including chicken and lamb that had been spit-roasted (Snodgrass, 2004). In 1502, Ottoman Turkey turn out to be the first country to constitute and regulate street-food (Bruce Kraig, 2013). Throughout the American Colonial period, "street vendors vended oysters, baked corn ears, fruit, and sweets at low-slung

prices to all classes." Oysters, in particular, were a low-priced and prevalent street food until around 1910 when overfishing and pollution caused rates to increase. (Turner, 2008).

Perhaps primeval and feudal civilizations were compassionate to these roaming traders and that is why they thrived. But in contemporary times we find that street vendors are hardly ever considered with the similar degree of respect and acceptance which should be given to them. They are confronted by metropolises and police in the urban areas as illegitimate dealers, the urban middle-class criticizes continuously how these vendors make urban life a living hell as they block roadways, create road traffic problems, and are also involved in anti-social actions.

## OPERATIONAL DEFINITION

In the language of a layperson, street vendors are the ones who sell (vending) material goods in the street to the public either in a static manner or with mobility through carts, etc. As per the recently enacted Act, a street vendor is one who offers goods or services for sale to the community without having a forever erected structure but with a provisional stationary structure or mobile stall (or head-load). The Government of India has used the term' urban vendor' as comprehensive of both dealers and service providers, stationary as well as mobile, and includes all other local/region precise terms used to describe them, such as hawker, peri walla, rehri-patri walla, footpath dukandars, sidewalk traders, and more (Street Vendors Act, 2014).

Street vendors – and the method of manufacture and consumption that their living constitutes and represents - are omnipresent in every city across the world today exactly because the problem of manufacture has not truly been resolved. Street vending differs importantly in scale, timing, locality, and compensation; it varies in terms of workforce, and types of goods and services. (2000).

## STREET VENDORS IN INDIA

As per Government of India statistics (2004), "there are 10 million street vendors in the country (NCUES 2006). Mumbai accounts for more than 250,000 street vendors, Delhi has 450,000, Kolkata, more than 150,000, and Ahmedabad has 100,000. Majority of them are migrants or laid-off workers, work for an average of 10–12 hours a day, and remain disadvantaged. Indore, Bengaluru, and Bhubaneswar have around 30,000 street vendors (ibid). The progressive rise in the number of street vendors in urban cities is the closing of factories, decrease of employment in the formal sector, and climate change to some extent. Afterward the shutting of fabric mills in major cities, formal sector workers faced large-scale joblessness. (Bhowmik, 2001).

Over the years street vendors have systematized themselves into unions and associations, and many NGOs have started working for their rights. The National Association of Street Vendors of India (NASVI), is an alliance of hundreds of street vendor organizations, unions, and non-governmental organizations (Street Vendors Bill, 2012).

### Table 1.1

### Proportion of Street Vendors to the Urban Population

| Name of the City | Population (in Millions) | Street Vendors (in Thousands) | Proportion of Street Vendors (%) |
|---|---|---|---|
| Ahmedabad | 5.4 | 100,000 | 1.85 |
| Bengaluru | 6.8 | 100,000 | 1.47 |
| Bhopal | 1.7 | 14,000 | 1.00 |
| Bhubaneswar | 6.5 | 30,000 | 0.46 |
| Delhi | 15.9 | 30,000 | 1.89 |
| Guwahati | 8.19 | 15,000 | 0.18 |
| Hyderabad | 6.4 | 100,000 | 1.50 |
| Jaipur | 2.9 | 100,000 | 3.45 |
| Kanpur | 3.2 | 100,000 | 3.12 |
| Kolkata | 14.8 | 100,000 | 1.01 |
| Lucknow | 2.7 | 100,000 | 3.70 |
| Mumbai | 19.0 | 250,000 | 1.31 |
| Patna | 2.2 | 50,000 | 2.27 |
| Ranchi | 1.0 | 35,000 | 3.50 |
| Vijayawada | 1.1 | 7,729 | 0.71 |

*Source: United Nations Population Division, Department of Economic and Social Affairs, Urban Agglomerations 2007 and Census 2001.*

"While trustworthy data are mainly hard to come by, street vendors are projected at around 2 percent to 2.5 percent of the populace of major Indian cities. It is pointed out in a study that the road setting, plan, and landscape of road traffic in cities imply both that street vendors are unavoidable and that such street occupation aids a very actual and otherwise mainly unsatisfied demand. In general, street vendors make very scanty earnings– consequently, it would be precise to simplify that most street vendors are greatly poor comparative to their equals

in the recognized sector of the economy" (Naik, 2013).

The then Central Minister for MoHUA Shri. Ajay Maken has advised that no vendor must be dispossessed and evacuated until the Street Vendors Act comes into effect, while also opining that self-employed vendors have equivalent risks in projects of growth and democracy and that a city cannot become all-encompassing and vivacious unless it integrates the occupied poor in city development design (Sinha, 2013).

## The Street Vendors (Protection of Livelihood and Regulation of Street Vending) Act, 2014 and its salient features

The Street Vendors Act 2014 aimed in order to guard the income of street vendors and provide a favorable and unafraid work atmosphere to fulfill their needs to carry forward their street commerce without aggravation, removal, or coercion. Likewise, it also controlled the activities of street vending by way of management of 'civic spaces and traffic. Following are the specific provisions and features given under this Act:

• **Town Vending Committee**

Under the realm of this Act, the local establishments are provided with provisions of creating a Town Vending Committee (TVC). It has been envisioned by the central authority to implement the provisions under the chairpersonship of the Municipal Commissioner.

• **Street Vendors Survey**

TVC will conduct a third-party survey of all present street vendors, within the area under its jurisdiction in at least five years.

• **Certificate of Vending/License/ID cards**

The municipality through TVC shall issue Certificate of Vending and ID cards to identified street vendors.

• **Monthly Street Vending Fee**

The local authority through TVC shall decide a monthly street vending fee to be acquired from identified street vendors.

• **Vending Zones**

A maximum of 2.5 percent of the total populace of a ward or town or city will be given licenses for street vending. All street vending activities will be carried out in vending zones. The vending zones will be decided by the TVC in discussion with the Department of Urban Planning.

• **No Eviction**

No street vendor will be expelled before the survey is finished and vending licenses are distributed.

• **Transfer of Certificate of Vending/ License and Nomination**

In case of the death of a vendor, his/her family member will be allowed to continue the vending activity until the validity of the certificate of vending/license.

• **Relocation, Eviction, and Confiscation of Goods**

The Act has provisions for the process of replacement, removal, and seizure of goods.

• **Grievance Redressal Mechanism/ appellate authority**

The Act has provisioned a Grievance Redressal Mechanism and an appellate authority to deal with day-to-day grievances of street vendors regarding vending affairs.

• **Rights and Obligations/Duties of Street Vendors**

The Act also describes the rights, obligations, duties, and responsibilities of street vendors; which are broadly given in the Scheme and By-laws.

- **Cancellation of Certificate of Vending/ License**

The TVC can cancel or suspend the license if any vendor gives wrong credentials and do fraud.

- **Penalty provisions**

The Act also makes provision for penalties for violations conducted by street vendors, which will be decided by TVC.

- **Provision of Scheme and Bye-laws**

The government in consultation with TVC may draft the Scheme and By-laws for the actual regulation of street vending.

- **Promotion of Social Security measures**

The local government in consultation with TVC, planning authority, unions, and civil society undertakes publicity measures for credit, insurance, skill training etc.

- **Capacity Building Programme and Research**

The local government in discussion with TVC can undertake a capacity building plan for street vendors, and stakeholders and conduct action research.

**Chandigarh-Based Experience: Establishment of Street Vendors' Cell- An important component of Municipal Corporation Chandigarh.**

**Street Vendors Cell:** It is established at Municipal Corporation, Chandigarh under the Street Vendors Act, 2014 to address the concerns of registered vendors by way of providing licenses, regulating street vending, providing sustained hand holding through extending sustenance under Support to Urban Street Vendors (SUSV) component of DAY-National Urban Livelihood Mission of Ministry of Housing; Urban Affairs (MoHUA) Government of India. The cell started functioning in 2016. The main work of the cell is to identify the urban street vendors, provide licenses, address grievances and issues of street vendors, and converge DAY-NULM schemes for their upliftment through subsidy linked Self-employment, livelihood linked Skill training, Self Help Groups (SHGs) and Shelters for Urban Homeless.

**Mission:** To provide sustained hand-holding through livelihood protection and regulating street vending for their socio-economic upliftment.

**Approaches:** The Vendors Cell has adopted the following key approaches towards implementation of the Street Vendors Act, 2014:-

1. Establishing Transparency and Accountability.
2. Setting up an E-governance mechanism with no scope left for manual discretion.
3. Respect for Human Rights by adopting a humanistic approach.
4. Establishing Human Dignity in street vending.
5. Promoting the Bankability of street vendors through financial inclusion.

**Objectives:** The key objectives of Street Vendors Cell are:-

1. Identifying the urban street vendors through a third-party systematic GIS survey.
2. Verifying and registering identified street vendors.
3. Providing SMART Identity Cards and Licenses to registered street vendors.
4. Identifying and developing vending zones.
5. Relocating and rehabilitating registered street vendors as per plan.
6. Providing basic amenities to registered street vendors in the vending zones.
7. Addressing the humanistic issues and

problems of registered street vendors.

8. Integrating an interface between enforcement cells for effective implementation of the act.

9. Develop a Management Information System (MIS), web portal, and mobile app for establishing e-governance in the vendor cell.

10. Building capacities and empowerment of street vendors, and institutional development.

## Compliance Index of Street Vendors Act, 2014

As per the draft report published by the Center for Civil Society, 2019 on the compliance index of the Street Vendors Act, 2014, the position of Chandigarh city is at third rank in the country and first in the UT in the degree of implementation of the street vendors act, 2014 with respect to the indicators in the Act.

## Classification of Street Vendors Fee Zones and Street Vendors

The TVC in its 5th and 6th meetings held on February 9, 2017, and March 3, 2017, correspondingly has classified vending fee zones and street vendors categories. As per the classification, the city is alienated into three zones A, B, and C on the basis of sectors with exclusive populace, sectors with marketable activities and markets, and areas with EWS & rehabilitation colonies and slums.

Also, the TVC classified stationary street vendors in addition to Mobile vendors into the following two categories:

1. **Essential Service Provider (ESP)-** The Essential Service Provider (ESP) street vendors includes tea seller, cycle repairer, roadside barber, iron men (*dhobi*), cobbler, news-paper, milkmen, and ear and massager, which are provisioned to vend from their surveyed locations.

2. **Non-Essential Service Provider (N-ESP)-** The street vendors specified other than the ESP category are considered in the N-ESP category, which are to be relocated to designated vending zones.

## Emergence of Municipal Corporation Chandigarh as a Responsive Civic Body and Safeguarding the Welfare of Street Vendors while Ensuring the Supply of Essential Commodities in Chandigarh during the COVID-19 Pandemic.

The Municipal Corporation Chandigarh (MCC) through its Street Vending Cell took many initiatives by offering support to vendors during the time of this unprecedented crisis when lockdown/curfew forced the closure of all markets. They took several administrative steps to maintain the supply of essential commodities to the general public while sustaining the livelihood of the street vendors. Simultaneously, compliance with all preventive steps to curtail the spread of Covid-19 was ensured.

Some of the supportive measures taken by Municipal Corporation Chandigarh for the street vendors at times of pandemic 'Covid-19' are listed below:

1. **Identification of vendors-**The vendors registered and working as essential service providers were identified. They were given Covid-19 special passes and ID cards for ensuring doorstep delivery of fruits and vegetables to citizens in Chandigarh during Covid-19 through mobile vending. The passes were delivered at the homes of the

vendors even late till mid-night.

2. **Health screening and mentoring** – Before the issuance of passes the vendors were screened for Covid-19 using thermal scanners by a team of doctors and health workers. They were trained regarding necessary precautions to be taken to prevent the spread of Covid-19 like social distancing, hand hygiene, etc. A special hygiene kit was developed and distributed free of cost to the vendors. The kit included face masks, hand sanitizers, caps, aprons, and gloves.

3. **GPS tracking App** – An android-based 'smart city' app was developed and used for tracking the movement of street vendors across the city.

4. **Interdepartmental collaboration** – CTU buses were roped in to ferry the vendors across Chandigarh to supply the fruits and vegetables in every sector. The police personnel accompanied the vendors to ensure compliance with social distancing norms by the people.

5. **Street Vendors run canteen** – A round-the-clock (24X7) canteen was run by street vendors in the Municipal Corporation Chandigarh office trained by the School of Public Health, PGIMER on health and hygiene in a pilot project initiated prior to the pandemic situation.

6. **Call center** – A call center was established for teleconsultation and answering queries regarding the vendor's passes. The tele-callers called vendors to convince them to start vending activities during the lockdown period. A total of 969 vendors were issued passes.

7. **Complementary support to registered street vendors** – As a part of social solidarity efforts the families of street vendors were provided immune busters (Chyawanprash), ready-to-eat oats, juices, and sanitary napkins by NITI Aayog associated civil society organizations engaged by Municipal Corporation Chandigarh.

**Improving and Transforming the Urban Street Vending Scenario**

The following are key recommendations that can improve the street vending scenario in the cities and can subsequently transform the lives as well as the livelihoods of street vendors and their family too:

1. The children below 18 years of age engaged in street vending directly or indirectly must be observed by the State Commissions for Protection of Child Rights (SCPCR), Child Welfare Committee (CWC), Nehru Yuva Kendra (NYK) for their growth, development, and rehabilitation in critical cases. Such children must be linked to Sarv Siksha Abhiyan (SSA), Madhya Siksha Abhiyan (MSA), and Uchhatar Madhyamik Siksha Abhiyan (UMSA), National Institute of Open Schooling (NIOS) as the case may be with support from civil society organizations.

2. The women who are engaged in street vending directly or indirectly must be linked to various schemes meant for women's development by Women Development Corporation in states and U.Ts. for their economic empowerment through subsidy-linked credit, skill training programmes, etc.

3.  The Street vendors who have married at an early age and in their youthful years should be given counseling on Family Planning by the Department of Family Planning under the Directorate of Health, with support from Civil Society Organizations and Community Based Organizations (CBOs) to keep a check on the birth of children at appropriate interval keeping in view the health of the mother, which consequently affect their livelihood.

4.  The street vendors who are under the Scheduled Caste and Scheduled Tribes category must be looked after and monitored by the State Scheduled Caste and Scheduled Tribes Development Corporations for extending benefits and privileges including credit linkages for entrepreneurship development, employment-linked skill training, and scholarships for their children.

5.  The street vendors who are under the minority category in the state should be looked after and monitored for extending benefits under the Prime Minister's New 15 Point Programme for improving their living conditions, educational level, livelihood opportunities through skill training, self-employment, women's self-help program, etc.

6.  The street vendors who are illiterate and middle pass should be linked to Adult Education and Open Schooling to attain basic and formal education with support from Non-Government Organizations including their own fraternity associations.

7.  Skill Training Providers under PMKVY, DAY-NULM should target street vendors and their families for skilling them under Recognition of Prior Learning (RPL) and other suitable skill training sets.

8.  Since the large influxes of persons engaged in street vending are migrants (interstate and intrastate). Therefore, a Help Desk should be created to make it a focal point like Pravasi Kendra at the District Level under the Deputy Collector/ Magistrate/Commissioner office so that they can be facilitated for their registration and subsequent documentation for getting their antecedents verified to avoid future issues with police and other authorities. It will also assist the local government in having data on migrants for planning purposes.

9.  Assistance to interstate migrant street vendors in getting a Bonafide/ Domicile Certificate as per the provisions envisaged in The Bona fide (Domicile) Policies of the respective state so that such street vendors can access benefits under various schemes of state government and union government like housing, subsidies, employment quota etc.

10. The street vendors who are homeless and living in open streets should be linked to the Shelter for Urban Homeless (SUH) component of DAY-NULM so that they can avail benefits of Shelter Home for their night stay with basic amenities.

11. Convergence of ICTC under State AIDS Control Society (SACS) for extending counseling to adolescent, youth, and adult street vendors staying single and in peers away from their families on ABC (Abstain,

Behaviour Change, and Contraceptive) strategies for their healthier and productive life.

12. Linkages to Drug de-addiction centers for counseling and treatment; in case if, street vendors are under the influence of drugs, alcohol consumption, and smoking for improving and modifying their behavior.

13. Linkages to the Directorate of Health and Social Welfare for priority-based issuance of Certificate of Disability from the state and Unique Disability Identity (UDID) for accessing the benefits and privileges for Persons with Disabilities (PWDs) example- artificial limbs, wheelchair, hearing aid, two wheelers with support and other aid devices and equipment in addition to subsidy linked credit, skill training, and reservation, etc.

14. The government should converge and link the benefit of Prime Minister Awas Yojana (PMAY) to the street vendors.

15. The street vendors who are devoid of electric supply and living in slums should be linked to LED-based Solar lights so they can access light in their houses and also at vending sites during late evenings.

16. The street vendor community should be engaged and made a partner in the Swachh Bharat Mission (SBM) to ensure their commitment to making the city clean.

17. Awareness creation by the Department of Health among street vendors for abstaining in visiting quacks for illness and treatment.

18. Provision of Low-cost meals by the Red Cross Society so that such street vendors can have access to quality food to ensure their nutrition level without cooking.

19. Regulation of vending hours by the enforcement authorities to avoid harassment by anti-social elements late at night.

20. Promotion of DAY-NULM schemes on Self Employment Programme (SEP-MUDRA convergence), employment linked Skill Training Programme, Self Help Programme among street vendors in a targeted manner by State Urban Livelihood Mission through urban local bodies.

21. Promotion and awareness of Financial Inclusion by converging with Lead Bank, FLCC, and City Level Federation (CLF) for financial literacy and counseling among street vendors.

22. Promotion of Digital Mode of transactions with UPI/ PAYTM/ G-Pay and using Rupay Card to avoid cash flow and increase bankability of street vendors with support from digital aggregators, CSOs, and CLF.

23. Work on developing Dignity of Labour among street vendors by way of organizing Street Food Festival, Street Vendors Fete, inviting street vendors to the exhibitions organized by CII, FICCI, and other state-owned exhibitors during key festivals and awarding them by way of recognition, etc.

24. Creating awareness on enrolling for PAN cards, filing Income Tax Returns (ITR), seeding PAN, Aadhar, and bank accounts among street vendors by FLCC with support from street vendors groups/ federations.

25. Creating awareness on enrolling for life insurance, general insurance, and

health insurance and paying regular premiums for safety coverage to families among street vendors.

26. Extending the benefit of Unemployment allowances to the wards of street vendors if applicable.

27. Linkages to the National Maternity Benefit Scheme (NMBS) and Integrated Child Development Scheme (ICDS) to the family members of street vendors.

28. Awareness generation on prevention of communicable diseases and non-communicable diseases e.g. HIV/AIDS, Malaria, TB, diabetes, heart ailments, etc.

29. Motivating street vendors on blood donation, plasma, platelets, and organ donation so that brotherhood irrespective of religion, ethnicity, language, and geography can be developed for making a peaceful co-existence between locals and migrants.

30. State Legal Service Authority (SLSA) and District Legal Service Authority (DLSA) should also create awareness regarding their NALSA scheme on poverty alleviation, acid attack victims, tribal development, mental health, disability, etc. free legal aid among street vendors community with support from Para-legal volunteers, panel lawyers and DAY NULM field network.

31. The State Human Rights and Women Commission should also take suo-moto cognizance of atrocities made on street vendors by the enforcement authorities violating their fundamental and human rights.

32. The civil society and philanthropy organizations like Rotary, Lions Club, Inner Wheel Club should also intervene among the street vendors community for handholding on health, education, skill development, and financial assistance, etc.

33. Awareness generation and sensitization on the provision of the Street Vending Act, 2014 among street vendors community by DLSA/SLSA, SMC, and other local NGOs with support from street vendors federations.

34. Creating a Single Window at local bodies and City Livelihood Center for dealing with daily affairs of street vending like license, ID card issues, fee payment, other queries on seizure, etc.

35. Establishing a Toll-Free Helpline and Counselling Center by recruiting Professional Social Workers to deal with agony, anguish, dissatisfaction, personal family crises, etc. among street vendors and to suggest and assist them in planning their road map to overcome their crises using social work interventions.

36. Advocacy with the Police and Traffic Department to develop an understanding of the provisions of the Act for the welfare and rehabilitation of street vendors and be a little soft and inclined towards their growth and development, who were considered to be encroachers prior to the enactment of the Act.

37. The city administration to go one step ahead by involving migrant street vendors under the Department of Culture in their local folk program on art, music, and literature festivals by developing a forum for an exchange so that various cultures

may have a chance to cross-fertilize brotherhood beyond borders and cultural ethnicity and portray an example of unity in diversity at the bottom of the pyramid.

38. Construction of Ware Houses, Cold Storages, and cloakrooms for storing commodities including perishable and non-perishable to avoid strain caused by fetching weight in mountainous regions leading to waist and backbone pain, especially among persons with disabilities, old aged, and women vendors by urban local bodies on rental basis.

39. Opening of crèches near street vending zones to facilitate women vendors by the Women and Child Department.

40. Provision of a proportionate number of public toilets with washroom facilities and solar system-based hot water keeping in view the harsh winters.

41. Increasing bankability of street vendors with dignity with assistance from Lead bank, FLCC, and other banks for seamless credit flow under the subsidy-linked collateral-free scheme and linking such credit under CGTMSE to avoid Non-Performing Assets (NPA).

42. Anti-encroachment drives by police and enforcement drives should be conducted with humanity so that chases in the street are avoided leading to scuffles, accidents, etc. Such drives can be made using IT interventions like video photography-based challan with support from GIS and MIS mapping leaving no room for criticism and human discretionary interventions.

## Strengthening Policy Mechanisms Recommendations

The policy level changes are vital in the effective implementation of the Vending Plan under the Street Vendors Act, 2014 at the national level; as somehow all the state and local governments are not very keen, self-driven, and goal-oriented due to structural federal differences, lack of uniformity in administrative structure, difference in political thought and apathy on proactive-ness towards degree of implementation of various provisions of the act. The overall restructuring of policy measures is not vital but there is an immediate requirement to add certain sections so as to maintain uniformity in implementation and accomplishment w.r.t. indicators given in the act.

## The key recommendations for strengthening and revamping street vendor policy are:

1. Uniformity in the process of Registration/ Survey of Street Vendors
2. Composition of Town Vending Committees (TVCs)
3. Identification of Vending/ Hawking Zones and special earmarking of proportionate spaces outside municipal parks, tourist destinations, religious places, hospitals, educational institutions, university campuses, railway stations, bus stations, airport premises for street vendors in confidence and persuasion with other authorities and departments to facilitate quality and low-cost products to local citizen. For instance, Juice vendors out-side schools, hospitals, parks, and Flower selling vendors outside religious places

and crematoriums.

4. Allotment Procedures
5. Special provision to marginalized communities including women, transgender, and Persons with Disability with respect to specific disabilities e.g. visually impaired, hearing impaired, physical and mental disability.
6. The time-sharing model is that of good practices in South Asian countries.
7. Street vending monthly fee slab and fee zone on the basis of commercial, non-commercial, and rehabilitation and slum areas.
8. Identification and adoption of key markets
9. Use of GIS mapping and real-time monitoring
10. Converging Smart City Mission and Street Vending Plan together
11. Use of ICT and Digital technology in the supervision and monitoring of street vending
12. Provision of Regulation of Prices by devising a mechanism at the city level.

## CONCLUSION

The establishment of convergence, linkages, and E-Governance among stakeholders referred is only key to ensuring the protection of living and regulation of street vending. In addition, rhythmic synchronization between local government, state government, and union government is a challenging task in the country with a great deal of diversity in the federal structure of the government led by political ideologies. However, the local government has to see the state and union government for resources, knowledge, know-how, capacity building, and funding, whereas both state and union government has to extend sustained hand-holding without any prejudice to urban local bodies to put into innovative practices and experiential or experimental learning.

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# Globally Making Cities & Communities Sustainable - Opting For Cool Cities

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## ABSTRACT

*This paper is an attempt to comprehend various facets of sustainable cities and communities under Sustainable Development Goals. It elaborates urban challanges, strategies of mitigating heat in urban areas, redifining legal framework with respect to building bye-lows, green building codes etc. The paper concluded that if urban growth and development is not rational in future than humanity is slated to be heading for a crisis; crisis worse than one created by the COVID-19 pandemic in recent past.*

**Key Words:** *Sustainability, Climate Change, Cities, Urban agenda*

## INTRODUCTION

With world urbanizing at an unprecedented scale; 21st century is known to be century of urbanization. Proportion of the world's population ,opting urban areas as preferred place for residence, has grown from 30% in1950 to 55% in 2018. It is projected to reach 68% by the year 2050, with almost 90% of the projected increase in population to take place in Asia and Africa (*UNDESA, 2019*). Urban areas have more than doubled between 1992 and 2018, contributing to enormous loss in biodiversity (*IPBES, 2019*). Over the next 20 years, urban population in developing countries will double to 4 billion, while the urbanized land area will triple. Besides housing larger proportion of population cities will emerge powerhouses of economic growth and physical development. Prosperity of nations , primarily and essentially, will hinge on the productivity, efficacy and operational efficiency of cities for the reason, urban population cumulatively will contribute about 70% of global gross domestic product(*UN, 2019*). Cities are going to dominate the planet earth by increasing its share of housing large population and also generating major proportion of employment and wealth.

Despite numerous positivities and making valuable contributions to the humanity, communities and societies, cities are also known for large number of negativities. Globally, cities have emerged  as spaces housing both dualities and contradictions. If Rapid urban growth helps create new opportunities, for employment, growth and development, they also remain responsible for creating social, economic, and environmental challenges. If cities are known to be powerhouses of economic growth, they also remain responsible for large proportions of global carbon emissions, climate change, disaster risks and irrational resource use. If Cities create wealth, they are known to promote

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poverty , inequality, social exclusion, violence and fragility. Urbanization and environment remain invariably negatively related with Increasing urbanization contributing to greater loss of biodiversity, flora and fauna, increased material consumption, and rapid climate change. Urbanization/ size of city and number of slums remain positively related. Urbanization and natural/manmade disasters remain closely connected.- adversely impacting cities by repeated cycles of natural calamities and violence. Cities are known to be major propeller of heating the planet, for reasons of irrational urban planning, high degree of congestion, obstructed mobility, destroying flora & fauna, making cities impervious and adopting unsustainable pattern of designing and constructing buildings.

The prevailing urban dualities and contradictions call for relooking, critically , objectively and rationally, at the options and systems which are being used in the planning, development and management of cities. If cities are creators of problems , then solutions are also embedded within cities itself to make them rational and sustainable. Accordingly, if cities are to be made more livable, sustainable, inclusive, effective, efficient , productive, consumers of least resources, generators of zero waste and promoters of environment and ecologies; then architects , planners and policy makers have to redefine/reorder their strategies for planning cities , designing buildings and managing cities;

failing which cities will become more of a liability and less as a valuable asset

# URBAN CHALLENGES



Based on the studies made and analysis carried out, it has been concluded that majority of social, economic, environmental and physical problems facing humanity, has genesis in the uncontrolled and unplanned rapid growth and development of the urban settlements. Studies have also concluded that Urbanization and global warming remain positively related, making urban centres  warmer than  surrounding areas ,led by urban heat island , traffic & transportation, hard surfaces etc.

Increasing urbanization invariably contributes to loss of biodiversity, increased material consumption, and climate change.Cities continue to promote poverty and inequality, social exclusion, violence and fragility, as well as climate change and disaster risks. Urbanization has exacerbated the impacts of global warming, with urban centres becoming warmer than their surrounding areas (*IPCC, 2021*).

Cities account for a high percentage of global carbon emissions and natural resource .Today more than 1 billion people live in urban slums, which translates that every fourth urban resident globally is a

slum dweller, often living with limited access to basic services, with proportion being as high as 56% in Sub-Saharan Africa (*UNDESA, 2021*). In addition, more than 1.5 billion people live in countries impacted by repeated cycles of violence. The burden of disasters, conflict, crime, and violence falls disproportionately on the poor. . Studies made have revealed that with increasing vulnerability, the number of people likely to be affected by natural disasters will triple to 2 billion. In the past decade since 1980, while low-income countries accounted for merely 9% of total disasters, but fatalities caused were as high as 48%. Growing negativities/ detrimental impacts of unsustainable urban development is becoming clearly visible with cities getting into crisis. Jakarta *is sinking;* New Delhi, shutting down schools amid high levels of *air pollution; whereas* residential *buildings are collapsing* due to lack of maintenance in Marseille, France etc.

## HOT/ WARMER CITIES
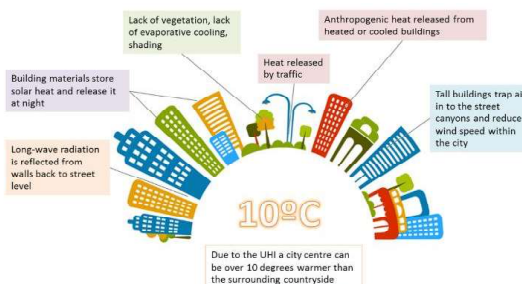


Besides facing crisis of orderly /planned growth and development, cities are also getting warmer with rising temperatures. Deadly heat is now baking cities. Research has shown urban areas can be 20 degrees *Fahrenheit*, hotter than the surrounding countryside/Rural areas and even within cities, one neighborhood might be 15 degrees hotter than another. It has been observed that poor neighborhoods are invariably hotter than the rich neighborhood**.** There is a clear    trend visible in increased

intensity and duration of heat waves. There have also been number of unprecedented extreme heat events happening globally. Majority of cities globally are on boil for the reasons that;

- Cities are being metaled and made impervious, on a large scale, with concrete and asphalt roads/ pavements covering almost every urban surface, absorbing and radiating the sun's rays.
- Urban canyons formed between tall buildings, trapping heat to make urban streets warm
- Rapid population growth and massive migration in hotter regions of the world.
- Lesser areas put under open spaces/ green covers with ever reducing number of trees , flora & fauna.
- High urban population density and buildings intensity concentrated in limited area.
- Heat emitted by large number of vehicles moving/stuck in traffic on urban roads
- Extensive use of air-conditioning in the buildings to make them cool with waste heat generated by air conditioners being pumped into the air; fueling a vicious circle of heating the outdoors to cool the indoors, making external spaces hot /more uncomfortable.
- Large consumption of energy to make buildings cool, with estimated energy needed for cooling buildings to  triple by 2050.

## IMPACT OF HEAT OF CITIES/ COMMUNITIES

Studies made and analysis carried out have revealed that average summer temperatures are predicted to rapidly increase in both hemispheres over the next 40 years. In the Northern hemisphere, hotter temperatures will creep towards the Arctic circle, while much of Northern Africa and the Middle East, will see average temperatures climbing above 35C (95F) between June and August. In the Southern hemisphere the hottest temperatures occur between December and February. In the next 20 years South American countries, such as Argentina and Bolivia, are forecast to have average summer temperatures above 35 degrees Celsius for the first time since records began.

Based on the classification made, on the basis of prevailing climatic conditions, India as a nation, has been divided into five distinct zones with majority of its geographical area classified under, Hot & Dry; Warm &Humid and Composite Climate Zones. Following the global pattern, India is also getting hotter and hotter. As per data made available by the Indian Metrological Department, in India, states of Rajasthan, Madhya Pradesh, Himachal Pradesh, Gujrat and Haryana accounted for 54% of the total heat waves. April, 2022 was recorded the hottest month for the north-west and central India and third hottest since past 122 years. 15% population living in 13% of Indian districts remain vulnerable to heat waves. Accordingly, rising temperatures in future are going to become another disaster, posing greatest threat to the very existence and survival of humanity , flora & fauna and planet earth.

Despite having numerous adverse connotations for humanity, communities, environment and ecology, rising urban temperature has received less attention by professionals and stakeholders, involved in planning ,designing, construction, operation and management of cities; as compared to other hazards like wildfire, sea level rise, flooding, extreme storms, drought. It's only recently that professionals/ communities have been taking the threat/risk posed by heat seriously. Major implications recorded for humanity/communities and cities due to rising urban temperatures, have concluded that;

- Higher urban temperature places human being in most vulnerable conditions. Large increase in mortality and strokes among human beings is reported when temperatures head above 25C.
- Number of cities exposed to extreme temperatures will nearly triple over the next decades. By 2050; seven in 10 people will live in cities with more than 970 cities experiencing average summer temperature of 35 C (95°F).
- Number of people exposed to heat waves jumped by 125 million between 2000 and 2016 (*WHO*)
- Extreme heat remains responsible for killing more Americans than any other natural disaster.
- Extreme heatwave in the summer 2018, declared a natural disaster by the country's weather agency, led to thousands of people hospitalized in Tokyo city, due to high temperatures,
- As per projections made globally, In UK-heat-related deaths are set to increase 257% by 2050 and 535% by 2080.

- Moscow, known for its perpetual low temperature, recorded estimated causalities of 11,000 people due to heatwave in 2010.
- India lost 4.3% of working hours in 1995; projected to lose 5.8% of working hours in 2030, due to stress caused by excess heat*(IMD)*.

Looking at the context of heat overtaking the human beings and threat posed by rising temperature to human living and working ; it will be critical to look at the vernacular, most appropriate and innovative options to make cities cool in order to make humanity, communities and planet earth safe from impending disasters and climate change.

## APPROACHING URBAN SUSTAINABILITY



*The Three Spheres of Sustainability*
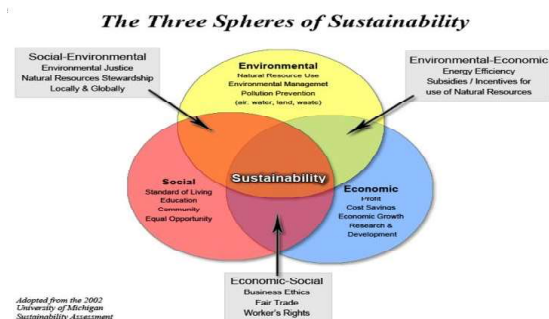
Sustainable urban development is receiving increased attention, since 1972 United Nations Conference on the Human Environment in Stockholm, Sweden; where policymakers recognized that; urban sprawl has destructive impact on the environment; while people move to urban areas with hopes of better employment opportunities and living conditions, whereas in reality, cities often struggle to meet the increased demand for housing, mass transit, and other infrastructures. Globally, nations/cities, around the world are evolving strategies and looking for appropriate options for; tackling the large number of challenges faced by human settlements & communities in terms of;

- Empowering cities to increase resilience to climate change, global warming, rising temperature, poverty and inequality, social exclusion, violence and fragility,
- Minimising climate change, disaster risks and building sustainable communities
- Redefining urban planning to make it inclusive and responsive to the needs of local communities
- Building on participatory approaches that fosters the engagement of marginalized actors while advancing access to basic services such as water and sanitation.
- Overcoming barriers and roadblocks between different levels of government,
- Promoting options and strategies for strengthening urban-rural linkages,
- Fostering decarbonization across the energy, transport, and building sector.
- Undertaking Heat & vulnerability mapping for measuring urban heat & assessing vulnerabilities to target future action
- Creating Heat wave emergency management by- Developing heat wave emergency response systems (cooling centres, heatwave public communication)
- Developing urban heat strategies and

integrating heat action into long-term planning .

• Finding Heat mitigation solutions and methods for implementation solutions; such as cool roof/ porous pavements, green building envelopes, urban forests and alternative cooling techniques.

## STRATEGIES OF MITIGATING HEAT IN URBAN AREAS

Cities are known for its intensity of development and concentration of population, institutions, people and vehicles , which invariably leads to increase in activities and increase in temperature of cities and towns. In order to manage heat in urban areas, policy options as per normal practices revolve around -*Heat mitigation* and *Heat management*. Heat Mitigation is defined as the process; which involves; looking at the processes/sources, which are responsible for generating heat including creating urban heat island. It also includes, identifying options which can be leveraged for reducing the heat generated by the various identified processes/sources in the urban area. Since vehicular traffic , buildings, hard pavements and air-conditioning are major propellers of heat in urban areas accordingly heat mitigation would involve process strategies which will reduce vehicle movement; minimise the need for air-conditioning; using materials that are porous, more reflective and lighter in color so that they trap less heat to start off ; making pavement cool ; promoting cool roofs or even cooler walls in the design of buildings and making cities green by promoting large scale plantation. On the other hand, heat

management would include preparing and

responding to both chronic heat and managing the general rise in average temperature in the cities. Both these strategies need to be leveraged for making cities cool. It also needs to be understood and appreciated that options for cooling cities remain relevant and need to be made applicable on priority, to cities having hot summers where air conditioning is needed to create ambient temperature.

Integrating Cooling in Urban Planning- Making Cities Compact.



Cities becoming warmer has genesis in the fact that urban planners have never ever understood and appreciated that physical planning also plays critical role in modulating the temperature in urban areas. This remains beyond planner's comprehension, for the simple reason that urban planners are never taught and made aware about the implications of planning in moderating/increasing the urban temperature. Heat reduction is largely ignored in urban planning, even as temperatures soar. In this era of ever rising  urban temperature , under the umbrella of climate change, everyone in the community should have the benefit of thermally safe indoor and outdoor environment, The agenda and objective

of making cities thermally safe can never be achieved, unless rationalizing temperature is made integral part of settlement planning. This would call for, looking critically and objectively, at the existing pattern, approach, intent contents and scope of city planning and redefine the process and approach to the planning of cities/NHs, so that cities remain cool even in the most adverse climatic conditions.

Making cities cool would require that pattern of city planning should be changed from cities expanding/sprawling in all directions without any limit, to make them more compact, so that large earth surface is not exposed to solar radiation. Compact cities have distinct advantage of eliminating large area under road-network, where roads are replaced by streets, which can be easily shaded by the adjoining buildings, a practice which has been commonly used in the cities, planned in deserts to ward off the adverse impact of heat on roads/streets/cities. In addition, for cooling the cities the entire framework for planning and designing in terms of residential densities, height, floor area ratio, ground coverage, setbacks, land use pattern will require redefinition to achieve the agenda of making cites cool. Achieving this pattern of city planning would require that planning for cool cities in the hotter regions, should be made integral part of the urban planning course curricula so

that students coming out of the planning institutions should have a fair idea of the concept and approach, as to what goes into making a city cool. In addition, short-term courses should also be run for the in-service professionals, engaged in town planning departments/ urban local bodies/ development authorities/housing boards/

Improvement Trusts, etc. in order to create awareness and capacity for planning cool cities/ residential neighborhoods.

There also exist the need of understanding and appreciating the role and relevance of materials which is used in making cities and its implications in heating /cooling the urban spaces. If we are to make city cooler, we must also change the materials and the built form, which remain largely responsible for heating cities. Urban areas are invariably dominated by dark and hard materials – concrete, asphalt, paving – most of which absorb, rather than reflect, solar radiation. Studies have revealed that conventional paving can reach temperatures up to 67 degree Celsius and conventional roofs up to 50–90 degree Celsius, on a hot day. Such temperatures can have significant health impacts for the people living on the top floor of a building and travelling outside . Dark roof was identified as a major risk factor of mortality in the 1995 heatwave in Chicago. Government has a role to ban or phase out the use of black or dark roofs, at least in warm climates, because they pose a large negative health risk. The best option/way to overcome this is to use cool coatings– typically lighter pigments in asphalt or white-coloured coatings applied to roads, roofs and facades, which reflect more solar energy away and save the city from prevailing high temperature. In addition, avoiding dark roof needs to be made integral part of building bye-laws/zoning regulations made applicable in the cities.

As global temperatures rapidly climb, scientists, governments, and activists are scrambling for ways to counter the heat island effect and racing towards finding

options to cooling cities and achieve sustainability; Paris, has rationalized mobility by creating new bike lanes and fixing a generalized speed limit of 30 km/h for motorized traffic. Havana, Cuba, has promoted urban agriculture on large scale Curitiba, Brazil, has  pioneered the art of   bus based mass transportation, whereas Amsterdam, the Netherlands, has emerged as the world's cycling capital.

Global Cool Cities Alliance, comprising of large number of major cities of the world , is actively engaged in searching options and providing appropriate solutions to make cities cools and trying to advance efforts that build resilience of cities to rising temperatures. Cooling the world's cities with solar reflective urban surfaces remains easy, simple and most cost-effective step toward cooling the planet. The city of the future need to be made more reflective and greener for mitigating the heat island effect .Making climate resilience, integral part of urban planning would help in mitigating risks like extreme heat events and making cities more livable and supportive of environment and ecology.

## REDEFINING LEGAL FRAMEWORK

Legal framework has lot of relevance in making cities cool for the reason , it deals with the entire gamut of planning, designing, construction and operation of buildings, including use of materials and services to be provided within/outside the buildings. Despite critical role, Building Bye-laws put in place for regulating construction and making additions/alterations to buildings, does not provide any space on the subject matter of minimizing the element of heat generation by the buildings. In addition, planning/zoning regulations used for regulating sub-division of land and its uses also overlook role and relevance/component of heat generated by urban planning. Accordingly, entire urban planning and building bye-laws remain divorced from regulating the element of heat in cities. There's not a single authority in the country with consideration of rising temperatures built in their architectural design guidelines or sub-division regulations.

Considering the fact that large parcels of land are being developed by the private developers and large number of buildings are being constructed in the urban areas, accordingly, it will be rational that role and relevance of urban planning and construction of buildings is fully recognized and appropriately reflected/addressed in the legal framework so that urban planning and built environment is made more sustainable and supportive of the environment and ecology. A separate chapter must be dedicated in the building bye-laws and zoning regulations for ensuring that issues related to urban heat island are appropriately defined and addressed. This would call for leaving appropriate setbacks/ providing space for greening as part of planning of road network and residential/commercial areas for landscaping and planting of trees to make the roads/pathways/residential areas cool. In addition, it would require that planning and designing norms are defined to promote passive design of buildings; making optimum use of available sun-light besides ensuring cross-ventilation in all living spaces to make buildings sustainable and least producers of heat. Further materials specified for

construction of building should be such that it causes minimum absorption of heat and eliminate all chances of creating heat island. On the same pattern, land sub-division regulations shall be so decided that cities/NHs should have adequate open spaces and avoid unnecessary congestion to cause rise in temperature.

# PLANNING WITH WIND



Potential of wind in cooling and reducing the temperature and making cities pleasant/cool can be effectively leveraged by integrating the wind flow in the planning process of city and NHs. This would require mapping the prevailing direction of wind-flow for the city and making appropriate use of the wind flow pattern in the city planning and planning of the neighborhoods, by orienting urban roads /streets/houses to face the wind direction. This pattern of planning will help in washing away/ siphoning off excessive heat trapped in the city streets/ buildings by the movement air in the city. This strategy can be highly useful in making cities cool particularly in the coastal areas or settlements located close to the water bodies, which invariably remain warm and have high degree of humidity, throughout the year. Staggered positioning

of buildings will help in the effective flow of cool air to reduce the urban heat island effect by taking away heat trapped within the high rise buildings. Accordingly, existing air flow pattern in any area ,should form essential/important ingredients, while planning of cities; undertaking sub-division of land and positioning/designing of buildings.

**Planning for Orientation;**
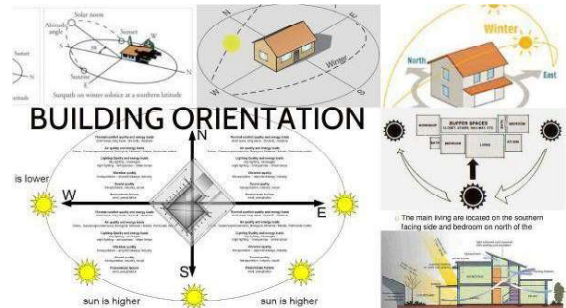


Role and importance of orientation has not been appropriately understood and appreciated in making cities cool and accordingly remains marginalized, muted and diluted. Orientation is primarily and essentially positioning plots/buildings with regard to four cardinal directions; North, South ,East and West; and four other subsidiaries directions; North-East, North-West, South-East and South-West. Each direction has its distinct strength and weaknesses, in terms of solar radiation and heating/cooling of cities/buildings. If North has no Sun; South has the highest Solar Intensity with Sun being vertical in position; Sun remains largely horizontal in East and West with West direction remaining hottest due to additional radiation caused by the earth. Invariably West direction needs to be avoided for minimizing heat gain. Accordingly, cool cities would essentially require that while planning ; maximum plots/lots carved out for residential/commercial/industrial and

institutional purposes have the best advantage of orientation. Once majority of plots are oriented in planning, in the best orientation, it becomes much easier for architects to plan for buildings which remain cool and responsive to the climate and the orientation. Longer axis of building facing north-south direction, with shorter sides facing East-West remains the best option for minimizing the adverse impact of buildings in heating the cities. For achieving the most optimum results planning with orientation has to be made integral part of the urban teaching-learning so that planners should understand and appreciate the context of orientation in cooling the cities.

## RE-ORDERING TRANSPORTATION- PLANNING FOR PEOPLE AND NOT VEHICLES
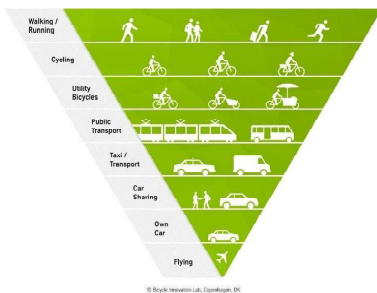


It is known that majority of problems of heating of cities, are the outcome of the way cities are planned and designed for mobility/traffic/transportation for goods and services. With priority going to vehicular traffic, large number of mechanized vehicles come on the road, which invariably leads to generating lot of heat and carbon footprints besides polluting urban area, due to burning of the fossil fuel. In addition, prioritizing mechanized vehicles, invariably involves creating large network of black top road surfaces needed for rapid movement of the vehicles besides providing large metaled spaces for their parking. As already explained, these black surfaces are largely responsible for absorbing / storing/radiating lot of solar heat and raising the temperature of the cities. This would require that the area under roads/parking should invariably be minimized for reducing the road related heating of the cities. This can be made possible if option of city planning is changed from *planning for people to planning for vehicles* , with first priority going to walking/cycling and least priority going to individual cars. In *addition, cities should be planned for promoting accessibility rather than mobility*. This would essentially reduce the area under roads and create more porous pedestrian/cycling pathways and accordingly would reduce the amount of heat absorbed/stored/radiated by the roads. Paris, has rationalized mobility by creating *new bike lanes* and fixing a *generalized speed limit* of 30 km/h for motorized traffic. Having well-planned road-side plantation, and shading parking spaces/footpaths, with large number of trees having large folio, are also known to keep pavements /roads cool, limiting the heat absorption/radiation by blacktop roads.

## MAKING CITIES GREEN

Trees, vegetation and flora remains the best option to cool the cities, because of capacity/capability they possess to make cities/buildings cool not by reflecting but by absorbing heat which falls on them. Studies have clearly revealed that on a hot day, vegetation can be a powerful tool in the fight against excessive city heat , for the reason that greenery not only provides shade but also stimulates evapotranspiration -a process by which water evaporating from plants' leaves reduces the adjacent air temperature. In addition, plants are known for their distinct quality of absorbing pollutants from the air and producing oxygen, essential for human living. Studies have also revealed that creating calming spaces by developing parks and growing trees in natural setting within the hyper-dense areas of city, not only promote residents' psychological wellbeing, but also help in cooling the urban areas. For cooling cities effectively, *Going Green* remains the cost-effective and most efficient option. Studies have concluded that, it's hard to beat vegetation due to numerous benefits it provides and problems it solves simultaneously. Deploying "cool" roofs, green walls, and shaded pavements that are light colored, are known for its efficiency in absorbing/reflecting the sunlight . Green spaces are known for its distinct advantage in urban setting and are known to provide numerous *benefits in terms of*;

- *making a neighborhood qualitative besides beautifying it,*
- *acting like a sponge for absorbing floodwaters and minimize flooding*
- *providing shade for people during a*

*heat wave,*

- *promoting good mental health.*
- *Creating jobs for planning, developing and maintaining green spaces.*
- *lowering temperatures, reducing demand for air- conditioning-reducing emissions, as well as heat,*

Since making cities green invariably involves making available land, manpower financial and physical resources, accordingly, it will be appropriate that project of greening cities should be properly planned and designed in order to make optimum use of available resources. Accordingly, priority of green cities should go to areas which have low green cover and having highest incidence of heat radiation.

Historically marginalized communities, lower-income communities, minority communities have higher heat severity than their richer counterparts. Accordingly, there is need to prioritize planting trees in communities that house lower-income, to make such communities safe against ill effects of heat. Increasing green spaces should invariably involve local residents/communities at the very earliest stages

For greening cities and having large number of trees in a limited area, the option of creating city forests can also be effectively used . City forests are known for its distinct advantages of housing large number of trees in a limited area, requiring minimum maintenance and upkeep and that too for a limited period due to regenerative nature of forests, attracting large number of birds and lowering of the urban area temperature

to a large extent. City forests have already proved its efficacy and efficiency in promoting green cover and effectively lowering/countering the adverse impact of heating the urban areas and can be made integral part of greening cities.

## MAKING BUILDINGS GREEN

Built environment is known for its peculiar qualities of being large consumer of energy, water and renewable/non-renewable resources throughout its lifecycle, spanning from planning, designing, construction, occupation and maintenance besides generating large waste. In addition, buildings are also responsible for adversely impacting environment, destroying bio-diversity and causing sick building syndrome. Buildings are also known to be primarily responsible for global warming, rising temperature, climate change and increasing carbon footprints. Accordingly, buildings are known to create conditions of warming planet earth and raising its temperature. In order to make buildings supportive of cooling the cities and moderating its temperature, it will be important that buildings are planned, designed, constructed, maintained and operated with care and caution to minimize its adverse impact on with  cities, environment , ecology and bio-diversity. In this regard, using rationally/logically the nature / natural elements including land, sun, space and greenery, as the basic elements of design and operation of the buildings will be most valuable for minimizing the adverse impact of buildings.

Passive design of buildings, based on the nature and natural elements, is known for its capacity to minimize the use of non-renewable resources and optimize the natural renewable resources for meeting its day-to-day needs. Based on circular economy such buildings generate minimum waste and accordingly help in making cities cool.

While designing green buildings and minimizing building-led heating, building envelop has critical role and importance. Buildings gain/ lose large amount of heat through building envelop. Within buildings envelop, it is the building façade and the roof which are largely responsible for heat gain and heat loss. If the heat migration through roof and façade can be managed, role of buildings in heating the cities can be minimized. One of the greatest challenges in keeping the built environment cool is overreliance on fully-glazed facades. These fully glazed facades, permit desirable natural light and views but can also lead to buildings trapping lot of unwanted heat in summer. Accordingly, these facades need appropriate shading to minimize solar radiation. However large glass facades pose great challenge in terms of shielding the glass from the adverse impact of direct/reflected solar radiation. This would require that shading devices are designed in such a manner ,so that it not only protect buildings from the sun, but for the best possible results, these shading systems also move in tune with the local weather and the path of the sun, for allowing for filtered light and views while protecting inhabitants from the intensity

of the sun. Based on the old wisdom of minimizing the heat gain, the mechanism of *mashrabiya* has been used in the Al Bahr Towers to create adaptable façade, which is estimated to reduce the building's CO2 emissions by 20%. The exterior of tower is operated on a building management system which operates, opens/closes hexagon-shaped shades, like flowers, following the sun, shading the parts of the building in direct sunlight but opening up to allow for natural light as the sun moves by.

Space available at the rooftop of buildings, can be appropriately used for installing solar panels, which would not only turn the energy from the sun into power for cooling the buildings but will also provide necessary shade to the rooftop. While the energy collected from the building itself will be used to power some of buildings electronics, the eventual goal for the future shall be to create " Net zero energy buildings".

Type and nature of materials used on outer/inner skin of the buildings are also known to impact buildings in terms of heating/cooling. Constructing buildings using more wood and natural resources invariably  reduces heat absorption as compared to buildings constructed by using steel and concrete. Planning buildings with air flow/cross - ventilation specifically helps in reducing heat accumulation within buildings.

The Oasia Hotel, designed by WOHA Architects, in Singapore , accommodates greenery across every surface. Wrapped in a dramatic 200m- tall planted trellis, the building almost drips with vegetation, and is wildly at odds with the corporate steel and glass of many urban structures and gives a notion of a huge tree in the city. It is like a device in the city that really supports a thriving eco-system three-dimensionally in a very dense environment. The net outcome/result is a building, which has greenery equivalent to 11 times its own footprint. Inherent strength of technology also needs to be leveraged to create adaptable buildings and infrastructure which can appropriately respond to challenges posed by different seasons and weather events. This will go a long way in empowering built environment to keep cities cool and comfortable in a warming climate Governments/ parastatal agencies are already incentivizing the construction of green buildings in their jurisdiction by offering additional free *FAR* for buildings planned, designed and constructed as green buildings besides giving rebates in property tax; reduction in building scrutiny fee etc. Considering the wide connotations of buildings in climate change, making buildings green will invariably help in cooling the cities and reduce adverse impact of built environment.

## GREEN ROOF

In addition to managing heat from walls; the next most important component remains the roof which is known to be responsible for large heat gain in buildings, due to its constant exposure to sun. Roof , in buildings, remains the most neglected area, which can be effectively used to regulate heat gain/loss besides using the space for meeting other purposes. In the congested areas of the cities, the roof can be effectively used for meet the deficiency of green spaces, by creating roof gardens by greening roof which also

help in insulating buildings against solar heat. Creating a rooftop garden packed with plants, would cool the entire area by releasing water vapours besides absorbing heat and water. Based on the studies made, the green roof has been widely accepted globally for providing numerous benefits to owners, communities, cities and environs in terms of;

- Reducing temperature within/outside buildings by minimizing heat island effect,
- Decreasing energy use and energy costs within buildings
- Improving air and water quality in the neighbourhood
- Sequestering carbon,
- Providing habitat for wildlife and attracting them to the urban areas
- Meeting deficiency of green spaces in walled cities/congested areas/ urban areas
- Avoiding flooding the cities, by reducing the amount/intensity/ duration of        storm water release
- Creating space for socialization for families and communities
- Increasing the life span of roof by protecting them from the adverse impact of ever changing climate

Recognising the role and importance of space under roof ;Singapore has made optimum use of distinct advantage of green roof in mitigating the harsh impact of heat on cities. The city-state has already embarked on its ambitious "garden city" plan in 1967 through intensive tree-planting and creation of new parks.Considering the limited availability of land, being an island, and with the growth of population and ever increasing economic activities; buildings

in Singapore have gone taller. In order to compensate for the decrease in the green footprints, due to increase in built areas, the island shifted its focus to include vertical greenery from traditional horizontal one. The concept provided genesis for creating "sky gardens" involving vertical planting and green roofs. Singapore has already created 100 hectares (240 acres) of skyrise greenery and plans to increase this to 200 hectare by 2030 – an area equivalent to Regent's Park. This growth is fueled by building regulations such as the Landscaping for Urban Spaces and High-Rises (Lush) policy. This policy requires/mandates that any new building must include areas of greenery equivalent to the size of the development site within the buildings itself. The green areas can be at ground level or at height, and often include luxuriantly planted balconies, shaded sky gardens and vertical green walls – which can help cause temperatures to drop by 2-3°C.

However, creating green roof involves lot of life-cycle cost which includes not only capital cost but also resources required for constant maintenance and upkeep of the green space including addressing issues related to water seepage and plantation. This has led to developing g the system of cool roofs which involves applying white paint on the roof surface to reflect majority of sunlight. Mechanism of using cool roof for cooling the city has been extensively used by the city of New York, known for its most dense/high rise development . Over the period, New York Cool Roofs initiative has seen more than 500,000m² of roof space covered in a white reflective coating, saving an estimated 2,282 tonnes of $CO_2$ per year

from cooling emissions. Cool roofs are being installed at no cost in the public buildings, for non-profit organisations and in affordable housing. In other buildings, free labour for installation is offered by the city, with the owner just paying for the materials. It may sound simple, but the results have been significant. Studies/ research made by NASA has concluded that a white roof could be 23C (42F) cooler than a typical black roof on the hottest day of the New York summer.

## COOLING ROADS

If it is white roofs in New York, then In Los Angeles, it is roads, not roofs, that have been reckoned as the major cause of heating cities. Occupying more than 10 % of land area with black asphalt, absorbing up to 95% of the sun's energy, makes large contribution to creating/ generating the urban heat island. The city is resp onding by painting roads in a white-coloured sealant with a high reflectivity, at a cost of $40,000 per    mile. Initial measurements suggest a reduction in temperature of 10-15ºF, though one road was found to be as much as 23F cooler after painting. Residential home-owners can opt for lighter tiles—regular old clay, which are known to reflect sunlight quite well. Researchers from Arizona State University took temperature readings four times a day and compared the treated roads to non-treated ones. They found that the treated pavements were, on an average, 10.5 to 12 degrees Fahrenheit cooler in the afternoon. Surface temperatures at sunrise were 2.4 degrees cooler, suggesting that the coating attenuated some of the carryover heat from day to day.

## MAKING USE OF WATER FOR COOLING

Water has great evaporative cooling quality when subjected to heat. Law of thermodynamics states that evaporation invariably causes cooling . Using this principle and inherent advantage of evaporation, water has been used historically as a tool to cool cities for centuries. The 14th century palace of Alhambra, housed courtyards with pools and arching fountains, stimulating the evaporation of water and cooling the hot, dry Andalusian air. In India , old buildings have also leveraged the strength of water in promoting cooling and lowering the temperature within/outside buildings. For optimizing the inherent quality of water, making cities spongy invariably helps in retaining water large volume of in the soil and lowers the temperature by releasing moistures when the temperature rises. Retaining moisture also help in making trees/vegetation grow in the city . Trees are known to provide greatest shield by absorbing heat for creating food by the process of photosynthesis besides shielding the earth surface against direct solar radiation. In addition , trees produce valuable oxygen and cool the environment. Each mature tree has the potential of generating seven cylinders of oxygen besides creting cooling equivalent to 5 tonnes of air conditioning on daily basis. Existing cities can also leverage the strength of existing water bodies, pools, fountains, sprinklers and misting systems to cool outdoor spaces. Chandigarh to a large extent, has been able to modulate the city temperature by creating inartificial Sukhna lake for cooling the city and the environs. Chongqing in China ,

known as one of the "three furnaces" of the Yangtze River Delta, given its long hot summers, has been able to provide relief, to the city by experimenting / using water misters at local bus stops. These spray clouds of water chilled to 5-7 C, cool the air as well as the waiting passengers. Combining water with other urban cooling strategies can yield significant dividend in the shape of temperature reduction in urban areas.

The University of New South Wales, the CRCLCL and Sydney; studied the urban heat island effect in western Sydney, where temperatures was often 6–10 C hotter than the coastal regions of the city; little more than 15 miles away, and found that adding water features and cool coatings would reduce cooling requirements by 29–43% and lower the overall average air temperature by 1.5C.Temperatures taken adjacent to water features were up to 10 C lower, the study found. Accordingly, cities in the hot climate must make use of low lying areas in the city to create large number of water bodies to make cities cool in summers. City of Tokyo also used large-scale misting machines for spraying water to overcome high temperature. Fine sprays of mist used in busy locations in Tokyo help in cooling pedestrians and reducing temperature in the hot regions of the city.

## TOKYO EXPERIMENT WITH COOLING CITIES

Tokyo city is known for its harsh climate in summers. Tokyo pavements are known for its high temperature due to absorption of heat generated by Sun and heat reflection off high- rise apartment buildings and stores. Considering the intensity of heat ;Tokyo has put in place number of measures to help people to cope with the heat ,which can also be used as a lesson by other cities;

- Solar-blocking paint, has been applied to various surfaces, especially those susceptible to sunlight. The paint can reduce heat of the pavement by up to 8C.
- Using Fine sprays mist in busy locations in Tokyo to help cool down pedestrians.
- Using "green air technology" to create comfortable spaces and reduce their environmental impact
- Using Swirling- Induction, air-conditioning system which pushes cool air in a spiral formation directly into lower level spaces where people are likely to be. This spiraling air flow helps to mix air more efficiently, reducing energy needed to cool a room up to 40% compared to conventional air conditioning systems.
- Making people aware about the impact of heat on human health/ human well being

## CONCLUSION

Cities are heating up gradually due to rise in temperature on continued basis. With rapid increase in global population, massive

migration, globalization and increased mobility; cities are assuming added importance in terms of economy, prosperity, employment and services. Looking at the fact that despite making valuable contribution to economy, employment and creating endless opportunities, cities are also becoming promoters of climate change , global

warming, rising temperature. These adverse impacts of cities have been globally recognized as major causes of concern for increasing fragility/ vulnerability of humanity, communities, nations and planet earth.

Taking cognizance of the fact that if cities are emerging as the cause of numerous distortions and disasters globally; then only cities can offer the best options to make this world more sustainable and livable. Since the operational efficiency, efficacy and productivity of urban areas has genesis in urban planning, development, management and governance, accordingly it becomes important and relevant that planners must come out with a new agenda for making urban planning process more focused, efficient, effective and rational; Architects on their part must put their best foot forward to make buildings green, sustainable and least consumers of energy and generators of waste/heat; Engineers must ensue universal availability of basic services and amenities in a cost- effective and time-efficient manner; landscape experts must ensure provision/making available open spaces to all the residents on equitable basis; traffic and transport planners must plan for people and promote accessibility rather than mobility; whereas leaders/ officials' involved in urban governance must ensure that city is looked at /served in a holistic manner, based on transparency, commitment, sincerity,integrity, dedication, equity and universal inclusion. According to Cool Cities Alliance, 'Excessive Heat is a major urban challenge. The need to protect people from extreme heat is one of the key resilience and sustainability challenge of the 21st Century. Rising urban temperature have negative implications for nearly every aspect of urban life'. Accordingly, if urban growth is not made rational, community/climate/people/bio-diversity centric, then humanity is slated to be heading for a crisis ; crisis worse than one created by the Pandemic Covid 19 . Achieving agenda defined in the SDG 11 shall remain, both a myth and a mirage, if cities are not made cool, inclusive, safe  and sustainable.

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# Community Engagement And Influencer-Led Campaigns: Overcoming Vaccine Hesitancy During The COVID-19 Pandemic In The Union Territory Of Chandigarh

Dr. Nidhi Jaswal*, Dr. Sukhbir Singh**

## ABSTRACT

*Vaccine hesitancy, defined as the delay or refusal to accept vaccines despite their availability, is a pressing concern in public health. This study delves into a specific case of vaccine hesitancy within an urban community in the Union Territory of Chandigarh. Notably, fears related to impotence and mortality emerged as significant drivers of this hesitancy.*

*The study unveils a one-month awareness campaign that remarkably reduced vaccine hesitancy within the community. Notably, individuals who received the vaccine transformed into advocates, actively encouraging others to safeguard themselves and their loved ones.*

*This case study underscores the paramount importance of tailored awareness initiatives, robust community engagement, the inclusion of local influencers and religious leaders, and precise targeting strategies in combatting vaccine hesitancy. It showcases the formidable impact of evidence-based information in dispelling misconceptions and emphasizes the pivotal role of trust in healthcare systems. These invaluable lessons provide a roadmap for future vaccination campaigns, ensuring broader acceptance and coverage, ultimately leading to enhanced public health outcomes.*

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*Keywords*: *COVID-19 Corona virus vaccine hesitancy Pandemic Community Engagement*

## INTRODUCTION

Vaccines stand as one of the most significant medical advancements in history, contributing to a remarkable reduction in the prevalence of diseases that have historically afflicted humanity. However, since the inception of vaccines, there has existed skepticism, and at times even outright opposition, towards this crucial medical technology.[1]

COVID-19, caused by the novel coronavirus SARS-CoV-2, presents a wide spectrum of clinical manifestations and outcomes. In a comprehensive study conducted in China early in the pandemic, it was found that around 80% of symptomatic cases experienced mild disease, approximately

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14% faced severe respiratory issues, and a critical 5% battled with life-threatening respiratory failure.[2] The severity of the disease and its mortality rates are strongly influenced by factors like age and underlying health conditions such as heart and lung problems, obesity, and diabetes.[3] With the availability of proven therapeutic options still limited, vaccination emerges as the beacon of hope and the most dependable strategy to shield ourselves from COVID-19 and its potentially devastating consequences. Equitable accessibility, affordability and availability of safe and effective vaccines are critical to end the COVID-19 pandemic. Despite the tireless efforts by WHO to develop, manufacture and deploy safe and effective vaccines, few national, social and demographic groups had been resistant to the use of this vaccination.[4,5]

Vaccine hesitancy encompasses a spectrum of beliefs and actions regarding the acceptance of vaccinations[6], spanning from outright rejection to complete acceptance.[7] It can lead individuals to postpone or modify recommended vaccination schedules, opt for partial vaccination, or decline all vaccines altogether.[8]

The issue of vaccine hesitancy holds significance not only in the context of COVID-19 but also for existing infectious diseases. Decreasing vaccination rates can jeopardize herd immunity, which varies depending on the disease, if they dip below a certain threshold.[9] Alongside other preventive measures, the timely administration of vaccines during an outbreak plays a vital role in mitigating associated illnesses and fatalities. Consequently, vaccine refusal can influence the pace at which an outbreak can be brought under control.

Various community groups faced disproportionate challenges in the rollout of COVID-19 vaccines due to prevailing social taboos and myths, despite not experiencing a higher incidence of COVID-19-related illnesses. The present study portrays the case study of a local community hesitant in getting the COVID-19 jab. The factors leading to the vaccine hesitancy and the interventions to address the issue have been discussed in this paper.

## CASE SCENARIO

In a community health center situated in the urban locality of Chandigarh, COVID vaccination began in the third week of January, 2021. In the initial phase, only health care workers were vaccinated but sooner this campaign was rolled out for adults aged above 60 years, followed by those between 45 to 59 years and later on for everyone aged above 18 years of age. On a certain day, 8 to 10 people came in a group to enquire about the availability of vaccine but they were reluctant to take the vaccine and left as such. Upon asking the reason for this, they did not give any answer to health care professionals on duty.

**Investigating the Issue:** Recognizing the need for a deeper inquiry, resident doctors devised a set of questions to unravel the underlying causes of this reluctance. On request with the key stakeholders, more interviews were done to delve deep into the roots of the problem. In September 2021, 10-12 interviews were conducted including 5 influential leaders, key stakeholders, 5 community members (3 males and 2 females). Through these interviews, it became evident that this

community group's skepticism was rooted in misconceptions. They spoke about various insecurities that their community people were facing as a result of inappropriate advertisements. Peer pressure from religious leaders and community members had led them to believe that receiving the COVID-19 vaccine could render them impotent or result in a decline in their population. Additionally, older community members feared that the vaccine would make them ill and lead to death, citing anecdotes of adverse events within their network.

The community members communicated in Hindi, their local dialect. One individual expressed, *"Corona ka tika hame napunsak bana dega.. aur hamara bacha nahi hoga,"* while another asserted, *"Yeh purushu ki bache paida karne ki kshmata ko kam kar deta hai aur aabadi ko niyantaran karne ke liye bharat me laya gaya hai"*. They claimed that widespread misinformation, both online and through traditional media, propagated the belief that getting vaccinated would render them impotent.

Additionally, among the older members of the community, there was a prevailing misconception that the COVID-19 vaccine would make them ill and possibly lead to death. One elderly respondent shared, *"Mere dost ne tika lagvaya tha aur do din baad hi uski maut ho gyi... main marna nahi chahta... abhi mujhe apne parivar ke beech rehna hai."*

Furthermore, the influence of male family members was found to be significant, as reported by female participants. They felt unable to question the decisions of their male counterparts, with male family members having the final say. One respondent explained, *"Agar hum chahe bhi, to bhi injection nahi lagva skte... jo ghar ke bade buzorgo ne keh dia ya pati ne keh dia, vo maan na hi padhega."*

During the COVID-19 pandemic, individuals sought information from a variety of sources, including television, radio, newspapers, social media, friends, co-workers, healthcare professionals, scientists, and government agencies, regardless of the credibility of the source.

## INTERVENTION

Following in-depth interviews with key stakeholders, the resident doctors expressed the need for a tailored awareness program, taking into account their beliefs regarding the COVID-19 vaccine. To dispel their unfounded concerns, evidence-based information and research videos from reliable sources were presented to the community. Additionally, healthcare workers conducted door-to-door visits, distributing informational flyers addressing vaccine benefits and debunking myths. These house visits received support from community leaders in the area.

Opportunities arose during Village Health and Nutrition Day celebrations at sub-centers and Anganwadi Workers (AWWs) gatherings to address the doubts of mothers and other residents concerning the COVID-19 vaccine. Medical officers and healthcare workers engaged with the community to alleviate their fears.

Local religious leaders played a pivotal role in bolstering confidence in the vaccine's safety and efficacy. One local guru publicly received the vaccine during his weekly *satsang*, leading a rally with his followers to promote vaccination. After a month of trust-building sessions involving multiple stakeholders, local influencers, political

figures, and religious leaders, a mass vaccination camp was organized. Over 300 individuals, including 180 males, received their first vaccine dose. Participants were counseled to encourage their neighbours, families, and friends to get vaccinated. Area-specific lists were compiled by ASHA workers to apply targeted approaches in areas with lower coverage. Persistent Information, Education, and Communication (IEC) efforts, house-to-house visits, and health administration endeavors eventually achieved full vaccination coverage.

The one-month awareness campaign effectively reduced vaccine hesitancy among the community members, with those receiving the vaccine becoming advocates, motivating others to protect themselves and their loved ones.

## DISCUSSION

Making the right decision regarding vaccination involves navigating a complex web of cultural, psychosocial, spiritual, political, and cognitive factors. Vaccine hesitancy is determined by three main factors: a lack of *confidence* in the effectiveness, safety, or the authorities overseeing the vaccination program; *complacency* stemming from a perceived low risk of contracting vaccine-preventable diseases (VPDs) and awareness about the negative consequences of COVID-19; and issues related to *inconvenience*, such as availability, affordability, accessibility, and the appeal of vaccination services, including factors like timing, location, language, and cultural context.[10,11]

The case scenario presented from the community health center in Chandigarh sheds light on a critical issue faced during the COVID-19 vaccination campaign -

vaccine hesitancy, particularly within a minority community. Individuals of reproductive age held unfounded concerns about the COVID-19 vaccine's potential adverse effects on fertility[12] and the risk of death[13] following vaccination was the concern of the older community members. However, these concerns lacked credible and valid grounds. To address such community concerns effectively, it is essential to provide appropriate counseling, engage in informational and educational activities (IEC), and use comprehensive, cautious, and culturally sensitive language to offer convincing explanations and evidence.[14]

Local public health workforces must be diverse, possess a range of skills, and excel at engaging with minority and vulnerable groups.[15] Recognizing that information sources can significantly influence public acceptance or refusal of COVID-19 vaccines, it is imperative to disseminate transparent and accurate information about vaccine safety and efficacy to instil confidence in the population, particularly those who may be ambivalent or skeptical. Therefore, gaining insight into the most trusted resources that people rely on to obtain information about COVID-19 vaccines is critical for the success of any future nationwide campaign.

The present case study highlights several key strategies and takeaways that can serve as valuable lessons for addressing and overcoming vaccine hesitancy, not only in this specific context but also in broader vaccination campaigns.

**1. Tailoring Awareness Programs to Community Beliefs:** One of the crucial insights from this case is the importance of developing customized awareness programs that take into account the

specific beliefs and concerns of the target community. In this instance, the investigators recognized that the community members held misconceptions about the COVID-19 vaccine leading to impotence and death. To counter these misconceptions, evidence-based information and research videos from credible sources were used. This approach aligns with studies that emphasize the need for tailored communication strategies to address vaccine hesitancy, as one-size-fits-all approaches may not effectively resonate with diverse communities.[16]

**2. Engaging Local Influencers and Religious Leaders:** The involvement of local influencers and religious leaders played a pivotal role in building trust and confidence in the vaccine within the community. The public vaccination of a local guru during his weekly satsang and his subsequent rally to promote vaccination highlights the power of influential figures in endorsing vaccination.[17] This strategy capitalizes on the fact that individuals often look to respected leaders within their communities for guidance, particularly when making health-related decisions.

**3. Leveraging Peer Influence and Personal Stories:** The case study demonstrates the effectiveness of peer influence and personal stories in motivating community members to get vaccinated. Those who had already received the vaccine became advocates for vaccination and played a crucial role in motivating others. Research supports the idea that personal stories and testimonials can have a significant impact on individuals' decisions to get vaccinated.[18]

**4. House-to-House Visits and Targeted Approaches:** The house-to-house visits conducted by health workers and the compilation of area-wise lists allowed for a targeted approach to vaccination. This method is consistent with findings that highlight the importance of going beyond mass vaccination camps and reaching out to individuals in their homes, especially in communities with high vaccine hesitancy.[19] Personalized outreach can address individual concerns and provide reassurance.

**5. The Role of Trust in Health Systems:** The case underscores the fundamental role of trust in health systems. Delayed outbreak mitigation due to vaccine hesitancy can erode trust in health systems, hindering timely access to healthcare services and leading to increased morbidity and mortality. This emphasizes the need for proactive measures to build and maintain trust in healthcare delivery systems.

**6. Importance of Transparent and Accurate Information:** Lastly, the case highlights the importance of disseminating transparent and accurate information about vaccine safety and efficacy. People rely on various sources of information, and addressing misinformation and providing credible information sources is crucial to gaining the trust of the population, especially those who are ambivalent and skeptical about vaccination.

In conclusion, the successful approach employed in Chandigarh's community health center serves as a valuable blueprint for addressing vaccine hesitancy in diverse communities. It underscores the significance of customized awareness programs, engagement with local influencers, leveraging peer influence and

personal stories, targeted approaches, trust-building, and the dissemination of accurate information. These strategies can be applied in future nationwide vaccination campaigns to ensure a higher level of acceptance and coverage, ultimately contributing to better public health outcomes.

## CONCLUSION

This case study underscores the importance of community engagement, influencer-led campaigns, and a personalized approach in overcoming vaccine hesitancy during the COVID-19 pandemic. Building trust, dispelling myths, and leveraging local influencers were essential steps in increasing vaccination coverage and reducing the impact of vaccine hesitancy. Future nationwide campaigns should consider these strategies to gain the confidence of ambivalent and skeptical populations and ensure the success of vaccination efforts.

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# Child Labour And Sustainable Development Goals: A Study Of Relation Between Child Labour And SDGs In Haryana

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## ABSTRACT

*Child labour is a global phenomenon that is international and local concern. International organizations are making efforts to eliminate child labour. Inclusive development is a prerequisite for continued success in the era of sustainable development.  The problem of child labour, illiteracy is exacerbated by other factors such as lack of access to decent jobs, lack of awareness and other related factors and considering that there is a linkage between child labour and a number of the SDGs especially that on poverty, health and education.  This study focuses on to know Child Labour, factors behind child labour and the role of SDG in elimination of child labour in Haryana State of India as well as to assess the progress so far made in the achievement of SDG.  This research is qualitative in nature. Both primary and secondary data has been used in developing the research. Primary data has been gathered from 4 districts of Haryana includes Gurugram, Rewari, Faridabad and Sonipat and secondary data has been collected from different previous research articles, papers, books, journals and media information. It was recommended that to achieve the SDGs Target on elimination of child labour, there is the urgent need for state policies targeted at deterring parents/guardians from putting their children into child labour, and for the state government to provide child-centred services to ensure children out in the streets are in schools, among others.*

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*Keywords: Child, Child Labour, SDGs,*

## INTRODUCTION

There is a linkage between child labour and a number of the SDGs. Children who are the greatest gift to humanity and childhood is an important and impressionable stage of human development as it holds the potential to the future development of any society. The age that is considered as child is below fourteen years (by constitution of India). Because children are too young to work, they reduce their current health or future earning potential by reducing their future options to reduce their future potential. Child labour is a global phenomenon that is international and local concern. Unfortunately, more than 160 million children worldwide (almost one in 10) are

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trapped in the vicious cycle of child labour (IPECL 2020). Despite the fact that many laws have been passed for the development and wellbeing of children and the government's efforts to provide a better future for these children, child labour violates the law of justice by harming children's ability to become adults and depriving them of health, education and social rights. Regardless of various measures taken by the government and non-governmental organizations to find solutions to the problem, India still has the largest child labour force in the world. Approximately 11.7 million children aged 5-14 years (4.5% of all children in this age group) to be working under hazardous occupations and processes as main and marginal workers accounting for around 25% of child labour worldwide (Census Survey of India, 2011). With the advent of industrialization and urbanization under the impact of the newly generated forces and under extreme economic distress, children are forced to forego educational opportunities and to do jobs which are mostly exploitative, less paid, dangerous conditions. These children work in a variety of settings such as agriculture, street children, peddling or running errands, domestic work, prostitute, factory, rag picking etc. in many parts of world.

The Sustainable Development Goals (SDGs), known as "Transforming Our World", are a set of seventeen aspirational ¯Global Goals with 169 targets and agenda, adopted to build on and complete the unfinished business of the Millennium Development Goals. The holistic approach of sustainable development embodies the meaning of inclusive development in all areas of development. This promotes a fairer future for all, with the core principle being commitment to leave no one behind. The Sustainable Development Goals (SDGs) also address child labor to maximize the child's benefits through goals like Goal 1. No Poverty (Child Poverty), Goal 2 Zero Hunger, Goal 3 Good Health,  Goal 4 Quality education,  but Goal 8 Good jobs and economic growth specifically target Child Labour by Goal 8.7of the SDGs commits the World community to: ¯Take immediate and effective measures to eradicate forced labour and modern slavery, human trafficking and secure the prohibition and elimination of the worst forms of child labour, including recruitment and use of child soldiers, and the elimination of all forms of child labor by 2025. . Considering the link between child labour and many Sustainable Development Goals (especially poverty, health and education goals), Francis (2016) argues by following these goals, especially the good education goal, it can be said that children's work is good. The International Labor Organization (ILO) has warned that the world will not achieve the Sustainable Development Goals (SDGs), particularly SDG Target 8.7 on ending child labour, unless society "dramatically" increases its efforts to end modern slavery and child labour (IISD, 2017).  Fortunately, the Indian government provides free and compulsory education to all children, but many do not go to school. UNICEF (2017) found that nearly one million children (both girls and boys) work in India. This requires cooperation and commitment to achieve the Sustainable Development Goals for the elimination of child labour. Also encouraging are the efforts of the Government of India to implement

various policies and programs to improve children's health. These policies aim to improve education, health, population and social development and, if implemented, will help reduce child labour.

For example, India has ratified Convention No. 138 of ILO, Minimum Age Convention and Convention No. 182 calls for the prohibition and elimination of the worst forms of child labour including child labour working on streets, child slavery, prostitution, pornography and drug trafficking and other activities that may endanger the health, safety, morals and education of young people. India also ratified the United Nations Convention on the Rights of the Child on 11 December 1992. From the above it is clear that reaching the 8.7 target by 2025 will require the use of poverty reduction, education, health improvement and social protection, among others. Progress in reducing child labor will also contribute to progress in other Sustainable Development Goals.

Clearly, apart from the UNICEF and ILO country studies in India, few attempts at empirical research have been conducted to assess the actual performance and impact of government policies and programs on the elimination of child labor that suggesting the need for further research.

The above reasons, this research work is needed to know about child labor, the factors that cause child labor and the role of the SDGs in eliminating child labor in the State of Haryana in India, as well as to assess the progress made so far towards achieving the targets. SDG target. 8.7 and hopes to make recommendations on how to achieve the goal of eliminating child labor.

# OBJECTIVES OF THE STUDY

- To know about problems of Child Labour,
- To explore the factors behind Child Labour for compelling the children into work and
- To find out the Role of SDG in eliminating Child Labour in state of Haryana in India.

# THEORITICAL FRAMEWORK

## Who is a Child

Defining at what age a person becomes or ceases to be a child is a constant debate in India. The Indian census counts everyone under the age of 14 as a child, as does most government programs. As per definition of UNCRC, any person under the age of 18 years is called as child. This definition of a child allows each country to set the age limit for children in its own laws at its own discretion. But in India, various children's laws define children in different age limits.

The Child Labor (Prohibition and Regulation) Act 1986 defines a child as a person who has not attained the age of fourteen.

The Juvenile Justice Act 2015 defines a child as a person who has not reached the age of eighteen.

## What is child labour?

Child labour is generally accepted that is work for that harms them or exploits them in some way (i.e., physically, mentally, morally or by blocking access to education).

**International Labour Organization (ILO)**
The term "child labour" is often defined as work that deprives children of their childhood, their potential and their dignity,

and that harms to physical and mental development. It refers to work performed by children under the minimum legal working age, based on the ILO Minimum Age Convention, 1973 (No. 138), as well as the worst forms of child labor as defined by the ILO in the Worst Forms of Child Labor Convention,1999 (No. 182). This is work that:

· is mentally, physically, socially or morally dangerous and harmful to children;
· interferes with their schooling by:
· depriving them from formal education
· obliging them to leave school prematurely; or
· Ask them to try to combine school with a long and demanding job.

**UNICEF:**
UNICEF defines child labor as work exceeding the minimum working hours depending on the age of the child and the type of work performed. Such activities are considered harmful to children and should therefore be removed.
? Ages 5-11: At least 1 hour of work or 28 hours of homework per week.
? 12-14 years: At least 14 hours of commercial work or 28 hours of housework per week.
? Ages 15-17: at least 43 hours of work or housework per week.

**Government of India:**
According to Article 24, these are fundamental rights; "No child under fourteen years of age shall be employed in any factory or mine or in any other hazardous employment."
Under the Child Labor (Prohibition and Regulation) Act, 1986, as Amended in 2012, the employment of children below 14 years of age in all forms of work and the employment of adolescents (those who have reached the age of 14 but have not yet reached it) 18 years) in dangerous professions and processes has been banned. The Amendment Bill 2012 completely bans child labour in 18 occupations and 65 hazardous processes. Persons over the age of 14 are only involved in non-hazardous business and processes. The Factories Act prohibits children under the age of 14 from working in factories. However, these aforementioned laws allow children to actively contribute at the household level. *"The amendment of section 3 of the said law to prohibit the employment of children in all occupations and processes except where the child helps his family after school hours or helps his family in the fields, domestic work, forest harvests or attends technical institutions during vacations for learning purposes, but does not include any aid or assistance to technical institutions where there is a subordinate employment relationship or work subcontracted and carried out at home"* (Ministry of Labor and Employment, 2013).

**Types of Child Labour:**
A clear picture of child labor can be obtained by identifying the types of work children are employed. Some types of child labor in India such as wage workers, self-employed, unskilled work, unemployed, slaves, homeless persons, within the family and outside the family are the different types of labor children. The number and type jobs that employ children are endless and encompass almost every aspect of human work and life. Since 1981, the Census of India has classified child labor

into nine types of work.  i) Cultivators, ii) Agricultural labour, low income iii) livestock, forestry, iv) fishing and plantations, v) mining and quarrying, vi) design, manufacture, maintenance and repair, vii) construction, viii) trade, ix) transportation, stores and communications; and x) other services.

In urban areas, they carry out more diversified activities, such as loading and unloading goods, looking after parked vehicles, working in hotels and restaurants, mechanical workshops, picking up rags, shining shoes, etc. Children are also engaged in the most hazardous and hazardous activities like mining, beedi making, match firework making, glass blowing units, blackboard making and pencils, etc. (Anandharajakumar, 2004)

## FACTORS RESPONSIBLE FOR CHILD LABOUR

The phenomenon of child labor in our country is a product of social and economic conditions. Inadequate regulations, weak laws and lack of political choice can be considered as important factors in the continuation of this heinous crime. Neglect of parents' behavior and neglect of their children's education, abilities and skills has been proven to be the cause of child labour. In addition, poor parents who abuse and violence against their children trust their children and explain that education will not improve their economic situation and that their children will benefit from starting work now in the long run. Children cannot go to school for free due to poverty and lose money. Basic needs are not education, but food, medicine and clothing.

## 1) Factors that "push" children into work include:

### I. Poverty
Although there is no single factor responsible for the participation of children under the age of 14 in highly hazardous work, poverty appears to be one of the main reasons. Despite the government's high demands, the majority of the population still lives below the poverty line. Therefore, collecting children's rags is no longer a means of exploitation but is necessary due to the economic needs of the parents and, in many cases, the child himself (self-dependent). Poverty often forces parents to send their children to dangerous work, even if they know it is wrong. They have no other alternative because they need money. The insufficient income of parents does not meet the minimum requirements of children, which encourages them to enter the labour market.

### II. Parental illiteracy
Many underdeveloped and developing countries, like India, suffer from widespread illiteracy. Illiterate parents do not realize the need for good physical, emotional and cognitive development of their child. Sometimes, the importance of education are not understand by parents for their children. Faced with the dilemma between sending their children to school or sending them to work, they often choose the one that offers the most immediate benefits. Additionally, a child's willingness to learn is influenced by parental attitudes. In the absence of an environment that encourages the child to study, the child loses interest.

## III. Family pressure to work and learn the family trade

In India, social structures have acquired a rigidity that makes it very difficult for a person to free themselves from the restrictions that govern a child from birth. People expect their offspring to follow in their footsteps. They are trained from a young age in the profession that the family practices. Children are prohibited from exploring other routes. For this reason, the children of rag pickers start working with their parents at a very young age. Therefore, they cannot benefit from formal education and escape rescue.

## IV. Lack of interest in education and school.

The instruction that follows in most schools is not designed to capture the student's attention. With the emphasis on rote learning, children become bored very quickly and the opportunity to get out and work somewhere seems more appealing. In addition, very little technical training is provided in schools. Even after devoting many years of his life to school, the child does not possess any technical skills that would enable him to earn a decent salary in the market. Without some immediate benefit to children from their education, the incentive to work increases.

## V. Migration

Every year, a massive rural population migrates to urban areas, especially metropolitan cities like Delhi, Kolkata, Mumbai, Chennai, etc., in search of employment opportunities and better economic prospects. In Delhi, most migrants are illiterate or semi-literate and unskilled farmers and laborers who are forced to leave their villages due to poverty and unemployment. Having a limited capacity to create jobs in urban areas, these migrants only find salvation in the informal sector, as porters, servants, street sellers; Construction workers, ragpickers, etc., as well as women and their children also work in the same way. With limited income and resources, migrant children are forced to work in order to supplement family income and improve their standard of living.

## IV. Lack of organization

there is lacking of organization like trade unions who deals and provide platform to express their grievances and fight against injustice with them. But children are incapable of organizing themselves into such unions. This forces them to work at the lowest of wages, harassment, and exploitation and work in the worst possible conditions.

## 2) Factors which 'pull' children into child labour include:

i.   Easy to work without skills
ii.  Leisure and entertainment
iii. Reports from peers of positive experiences
iv.  A sense of adventure.

## Intervention of Indian Government towards Child Labour

To achieve sustainable development, the primary duty of government is to guarantee the rights of disadvantaged and exploited citizens, such as child labor. Children being the future asset of the nation, the government, along with other organizations, is responsible for ensuring the basic rights of these poor and homeless children. The Government of India has ratified the closely related "ILO

Convention 138 (C138) on Minimum Age for Entry into Employment, 1973" and the "United Nations Convention on the Rights of the Child (CRC)". national policies, laws and other legal obligations. . . In 1979, the government formed the first committee called the Gurupadswamy Committee to study the issue of child labor and suggest measures to address it. Based on the recommendations of the Gurupadaswamy Committee, the Child Labor (Prohibition and Regulation) Act was enacted in 1986. Under the Act, the employment of children is prohibited in certain specific hazardous occupations and processes and regulates the working conditions in others. The list of hazardous occupations and processes is gradually expanded on the recommendation of the Statutory Technical Advisory Committee on Child Labor. The law was subsequently amended in 2016 with the enactment of the Child Labor (Prohibition and Regulation) Amendment Act, 2016, which prohibits the employment of children below 14 years of age in all employment, as well as by provisions prohibiting the employment of adolescents (14 to 18 years old) in scheduled hazardous trades and processes.

In line with the above approach, a National Policy on Child Labor, formulated in 1987, seeks to adopt a progressive and sequential approach with emphasis on the rehabilitation of children and adolescents. The action plan outlined in the policy to address this issue through the Legislative Action Plan for Strict Implementation of the Child Labor (Prohibition and Regulation) Act, 1986 and the Action Plan based projects in high-risk areas focus on children and adolescents under National Child Labor Projects (NCLP).

## Children's Rights and Sustainable Development Goals (SDGs)

The Sustainable Development Goals (SDGs), officially known as "Transform our worlds", are a set of seventeen ambitious global goals comprising 169 targets and an agenda, adopted to expand and complete the unfinished work of the Millennium Goals For the development. Also known as the 2030 Agenda, it includes a specific goal to end all forms of violence against children (16.2). The Sustainable Development Agenda embodies greater ambition for children's rights globally by championing the theme "no one should be left behind". Although many countries around the world have ratified "the United Nations Convention on the Rights of the Child (CRC)". Millions of children are still left behind. Several other SDG targets include child neglect, abuse and exploitation. The Sustainable Development Goals are explicitly mentioned to emphasize the protection, promotion and implementation of a child rights-based approach to achieving sustainable development (UNICEF, 2017). SDG Target 8.7 specifically commits the international community to: "Take immediate and effective action to eradicate forced labor, modern slavery and human trafficking and ensure the prohibition and elimination of the worst forms of child labor children, including the recruitment and use of child soldiers, and by 2025, end child labor in all its forms. With this objective, the global community recognized for the first time, according to the ILO (2017), in the international development agenda, the right of all children to live free from fear and violence.

**Figure 1: SDGs specific targets on children rights based approach**



| Goal-1:<br>No Poverty<br>(Child Poverty) | 1.1.1 Children living below US\$1.90 per day<br>1.2.1 Children living below the national poverty line<br>1.2.2 Children in multidimensional poverty<br>1.3.1 Children covered by social protection<br>1.4.1 Access to essential services |
| Goal-2:<br>Zero Hunger | 2.2.1 Stunted children,<br>2.2.2 Prevalence of malnutrition |
| Goal-3:<br>Good Health | 3.2.2 Neonatal mortality<br>3.3.1 New HIV infections in children<br>3.3.2 Tuberculosis incidence in children<br>3.3.3 Malaria incidence in children<br>3.4.2 Adolescent suicide<br>3.6.1 Child road traffic deaths |
| Goal-4:<br>Quality<br>education | 4.1.1 Minimum proficiency in reading and writing,<br>4.2.1 Early childhood development<br>4.2.2 Pre-primary participation |
| Goal-8:<br>Good jobs<br>and economic<br>growth | 8.7.1 Child labour |

Source: Tonmoy & etal (2020) and based on UNICEF. (2017). Is every child counted?

This chart represents the thematic focus of the Sustainable Development Goals with specific child rights targets, including poverty, food security, health, education, clean water and sanitation, reduction of inequalities, peace and justice. To achieve the Sustainable Development Goals by 2030, several international organizations, as well as the Indian government, are incorporating effective measures for working children. For example, the Committee on the Rights of the Child adopted its General Comment No. 21 on street and child laborers, providing

appropriate guidance to the government in 2017 (OHCHR, 2017). Finally, the authors were motivated to conduct this research because of the shortcomings of previous research to explore the exact impacts on sustainable development. In addition to this, the authors of this research also encouraged to help policy makers and sustainable development actors by providing the real impacts of street children's substance abuse on the SDGs. It is also important to help authorities and SDG actors in India by providing them with effective opportunities.

Tonmoy et al (2020) attempted to reveal the exact impact of the child labor situation on the SDGs through "Drug abuse among street children and its impacts on sustainable development". The study reveals the reasons for street children's substance abuse as a type of child labor, explores the impacts on sustainable development, and reveals likely ways to alleviate this substance abuse problem. The study also revealed various impacts on the SDGs such as extreme poverty, illiteracy, health complications, imbalance of social harmony, loss of productivity and demographic burden. All development actors such as the state, NGOs and private agencies should take essential steps to address this problem of drug abuse among street children; Otherwise, this disadvantaged part of society will be a heavy burden on our society and will be a major obstacle to the achievement of sustainable development.

Mackintosh & Wori (2021) briefly assessed the SDGs on eradicating child labor in river states by applying a descriptive research design in the study on "the impact of the Sustainable Development Goals on eradicating child labor children in Rivers State. In the study, the researcher effectively assesses the impact of the Sustainable Development Goals on eradicating child labor in Rivers State. It was recommended that to achieve the SDG target of eradicating child labour, there is an urgent need for state policies to deter parents/guardians from subjecting their children to child labor and to form government to provide child-focused services to ensure children who are on the street are, among other things, in school.

In the era of sustainable development, inclusive development is the prerequisite for relentless progress. However, it is very unfortunate that there are approximately 10.1 million working children between the ages of 5 and 14 in India (ILO, March 2023). The number of working children is estimated to be increasing at an alarming rate, as poverty is the main and most important reason why children are forced to work and stay out of education. And the problem of child labor is compounded when illiteracy, lack of access to decent jobs, lack of awareness and other related factors are added. These families are often trapped in a vicious circle in which survival is the fundamental priority (Zaffar, 2023).

Kruger (2007) argues that child labor deprives children of their right to go to school, exposes them to violence and health problems, and reinforces intergenerational cycles of poverty. The reason is simple. He explains that the virtually poor people face inadequate basic needs such as food, clothing, health services and housing and, due to lack of education, in most cases earn little and

are therefore unable to meet all educational needs. of their children and thus encourage them to work to increase household income.

# METHODOLOGY

This research study was equally qualitative and quantitative in nature. For the development of the research, both primary and secondary data were used. Primary data was collected from 4 districts of Haryana including Gurugram, Rewari, Faridabad and Sonipat and secondary data was collected from different previous research papers, articles, books, magazines and media information. The sample size was 100. The data was collected by purposive non-probability sampling and the respondents are working children, government officials and NGOs as experts.
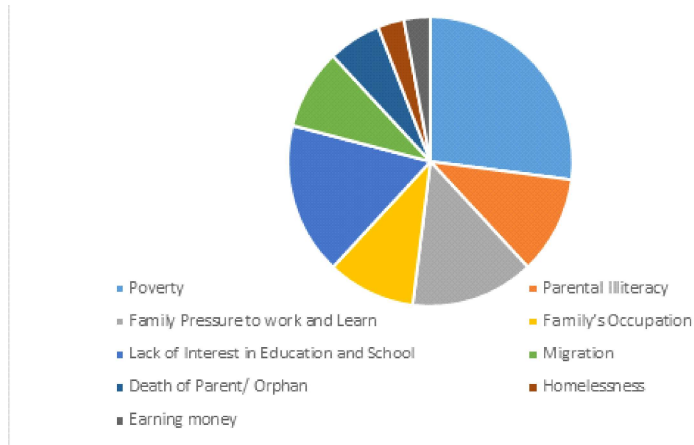
# FINDINGS

## Factors behind Child Labour

Working children live a miserable life on the streets. They are terribly deprived of their legal rights. In addition, harsh realities push them to work. The results in Table 1 and Figure 2 (as mentioned below) show the reasons why children are forced to perform work activities. The study revealed that poverty is the factor that influences child labor the most, followed by lack of interest in education and school and family pressure, which shows less effectiveness of political systems that cannot not meet the needs of children in their own region. Since the lot of child laborers will not improve overnight, it will be an obstacle to achieving sustainable development. Details of reasons for which children being compelled into Labour, as follows:

**Table 1:**

| Reasons for which Children being compelled into Labour | Respondents | Percentage |
|---|---|---|
| Poverty | 27 | 27% |
| Parental Illiteracy | 11 | 11% |
| Family Pressure to work and Learn | 14 | 14% |
| Family's Occupation | 10 | 10% |
| Lack of Interest in Education and School | 17 | 17% |
| Migration | 9 | 9% |
| Death of Parent/ Orphan | 6 | 6% |
| Homelessness | 3 | 3% |
| Earning money | 3 | 3% |
| Total | 100 | 100% |

**Figure 2-Reasons for which Children being compelled into Labour**



- ■ Poverty
- ■ Parental Illiteracy
- ■ Family Pressure to work and Learn
- ■ Family's Occupation
- ■ Lack of Interest in Education and School
- ■ Migration
- ■ Death of Parent/ Orphan
- ■ Homelessness
- ■ Earning money

**Problems faced by Child Labour**

Child labour is socially excluded and, in the long term, it will not be integrated as a human resource of the country, which represents a challenge for sustainable development. Table 2 and Figure 3 show that child labour faces many challenges: 26% of respondents faced physical and mental health issues such as physical weakness, insomnia and lung disease, and 18% of those surveyed were faced with dropping out of school, due to multiple reasons explaining poverty. is main. Followed by 16% of those surveyed, he faces arrogant public behavior and family complications. The percentage is less than 14% and 10% of fights with peers and colleagues and involvement in illegal and criminal activities are also significant issues that need to be addressed. It takes an hour to put more effort into providing a safe environment for children. Through which nation achieving the goals of SDGs successfully.

**Table 2**

| Different problems | Respondents | Percentage |
| --- | --- | --- |
| Physical and mental health problems like physical weakness, insomnia and pectoral diseases | 26 | 26 % |
| Arrogant behavior | 16 | 16 % |
| Involved with illegal and criminal activities | 10 | 10 % |
| Being school dropout | 18 | 18 % |
| Family complications | 16 | 16 % |
| Fighting with peers and colleagues | 14 | 14 % |
| Total | 100 | 100% |

**Figure 3- Different problems**
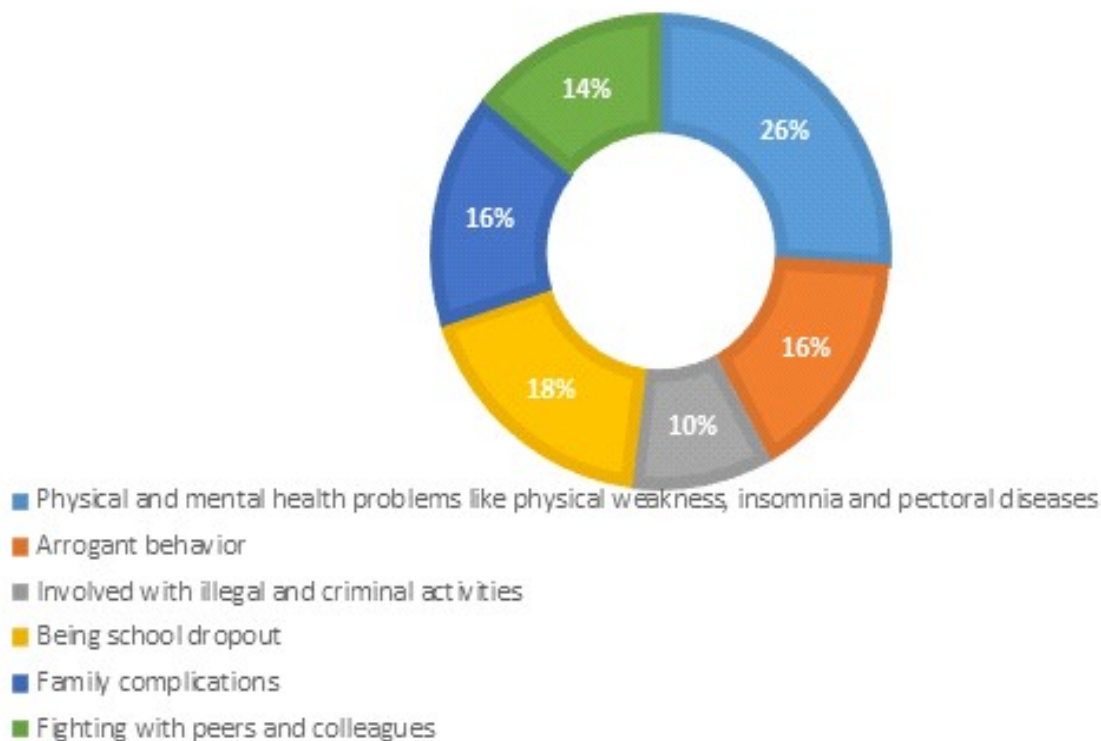


Role of SDGs' Poverty Reduction Goal in elimination of child labour

Rooted in poverty, the problem of child labor only worsens when combined with illiteracy, lack of access to decent jobs, lack of awareness and other related factors. These families are often trapped in a vicious cycle in which survival is the fundamental priority. The results in Table 3 and Figure 4 show the role of the SDG poverty reduction target in eliminating child labor in Haryana. The study found that the SDG poverty reduction target creates decent jobs for parents (21%), initiates support for inclusive and sustainable business practices (19%), initiates rights awareness program of children and development (17%), improves the increase in poverty. household income (15%), develops innovative products to meet the social needs of children (13%), sets up vocational training for children in light work (15%). These results reveal that the government is helping to achieve the SDG1 target by promoting inclusive economic growth, creating decent jobs, improving access to essential services and developing innovative programs to meet the social needs of young children.

**Table 3**

| Poverty Reduction Initiatives | Respondents | Percentage |
|---|---|---|
| Enhance increase in household income Initiates support for inclusive and sustainable | 15 | 15% |
| business practices through Start-up India | 19 | 19% |
| Creates decent jobs for parents | 21 | 21% |
| Develops innovative products to meet social needs of the child | 13 | 13% |
| Establishes vocational training for children on light work | 15 | 15% |
| Initiates child right and development awareness programme | 17 | 17% |
| Total | 100 | 100% |

**Figure 4 Poverty Reduction Initiatives**
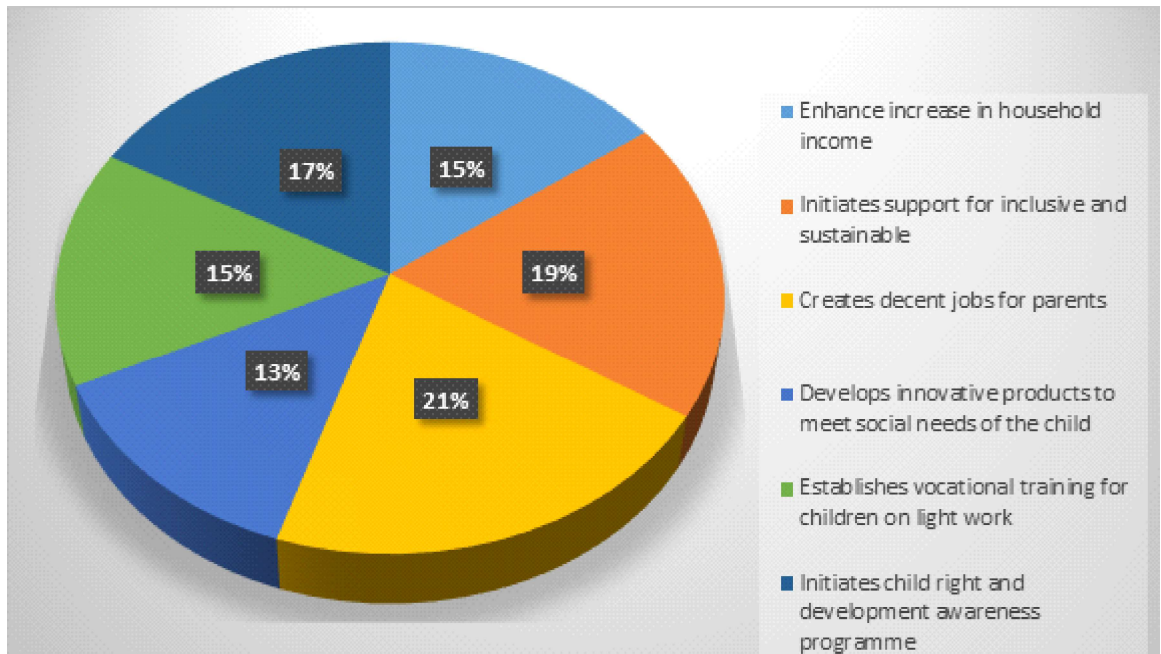
### Role of SDGs' educational promotion Goal in elimination of child labour

Education is the most effective strategy that helps reduce child labor. Even the pioneers of social justice have supported access to quality education as the most important step towards the abolition of child labour. The results in Table 4 and Figure 5 show the role of the education promotion target of the SDGs in eliminating child labor in Haryana. The study found that the goal of promoting education in the SDGs promotes scholarship programs for out-of-school children (37%), improves free education for all young children (13%), provides training free professional (10%), raises awareness of educational issues. children's rights (13%) and provides free meals and uniforms to every child (28%). These result analyses that those who are initiated in the promotion of education play an important role in the elimination of child labor by involving children in education to save their future.

**Table 4**

| Educational promotion Initiatives | Respondents | Percentage |
|---|---|---|
| Promotes of scholarship schemes for out of school children | 37 | 37% |
| Enhances free education for all young Children | 13 | 13% |
| Provides free meals and uniforms for every child | 28 | 28% |
| Provides free vocational training | 10 | 10% |
| Creates awareness on educational right of the child | 13 | 13% |
| **Total** | **100** | **100%** |

**Figure 5- Educational promotion Initiatives**
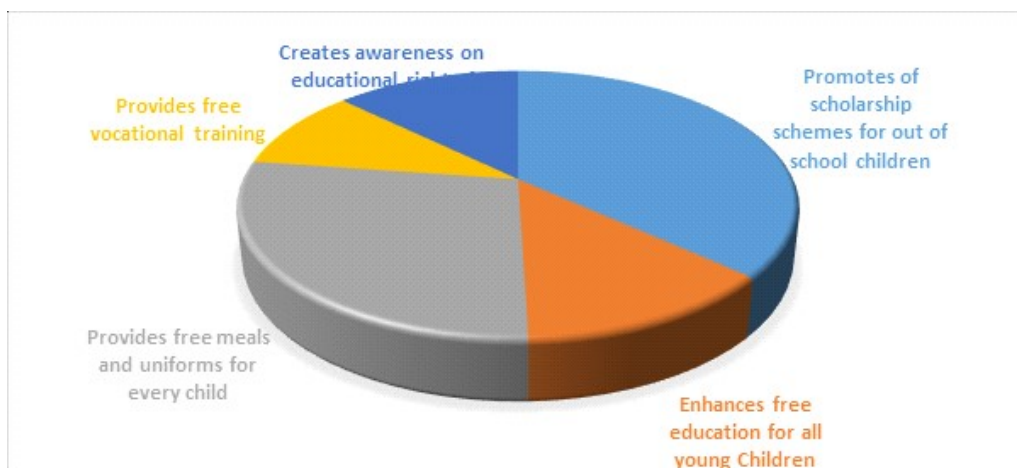
## Impacts on Sustainable Development

Child labour is going through a pathetic situation due to the violation of their socio-economic rights. They are victims of negligence which pushes them to fight against various problems of the society. Sustainable development requires inclusive progress to reach the poorest societies.

Through observations, interviews and desk reviews, the studies reveal that child labor has a range of impacts on the SDGs, which are as follows:

**1. Poverty:** The study area reveals that child labor fights against poverty which persuades them to undertake future endeavours. In the long term, children who drop out of education and have the least skills will find themselves unemployed at an early age and end up in the vicious cycle of poverty. Broadly speaking, Sustainable Development Goal 1 focuses on eradicating all forms of poverty. Child labor has harmful consequences on the lives of these poor children. Child labor makes them extremely poor and socially isolated. Therefore, achieving sustainable development without considering these poor children is a major challenge.

**2. Illiteracy**: the educational perspective is embedded in Sustainable Development Goal 4, which emphasizes child development and quality education. On the contrary, the childhood of child labor is dedicated to fighting against the harsh realities and dealing with this situation. The study area reveals that child labor does not have adequate access to education. Even the children of illiterate parents have no importance in education. In addition, most of the children are orphans, so they survive in difficulties and do not have access to education. The study shows that nearly 85% of children have never been to school and the remaining 15% have dropped out of school.

**3. Health complications**: In reality, working children do not have adequate medical support, clean water, sanitation facilities, etc. The study reveals that most working children use this drug to get rid of stress and hunger. Sustainable Development Goal 2, including targets 2.2.1 and 2.2.2, is related to child starvation and malnutrition due to hunger. In addition, Sustainable Development Goal 3 covers the context of good health, and Goal 6 is associated with drinking water and sanitation issues. Street children survive in conditions of ill health, malnutrition, dazed, without clean water or sanitation facilities, and suffer from serious health complications such as loss of appetite, headaches, strokes, stomach and mental illnesses , etc. This will therefore lead to loss of human productivity as well as premature death. In this case, the efforts of the government and other organizations are little more helpful in saving street children from this danger. As a result, it would be a significant failure of sustainable development without addressing the health risks of poor street children.

**4. Loss of productivity and economic growth**: In the short term, working children suffer from serious physical and mental problems and, in the long term, they lose their productivity because they work very young. The study reveals that the problem of child labour affects the socio-economic level of the nation. Additionally, Sustainable Development Goal 8 emphasizes quality jobs and economic growth. However, the study paints a bleak picture of the harsh reality of child labor as they somehow survive by working or

begging on the streets and engaging in illegal activities. Initiatives from the government and other organizations seemed insufficient to improve the performance of these children. In Haryana, child labor is seen as a problem along with obstacles to sustainable development.

## RECOMMENDATIONS

The findings and conclusions drawn from this study, guides us to make the following recommendations in order to reduce child labour in Haryana

1. To achieve the SDG target of abolishing child labor, there is an urgent need for state policies aimed at dissuading parents/guardians from placing their children in child labor.
2. Child rights agencies should increase public awareness programs in areas where street vending and other forms of child labor are prevalent.
3. Since the results revealed how children's education is affected, invariably perpetrating generational poverty, the education of all children must be seriously guaranteed. For no reason should any child in Haryana be deprived of full-time schooling for reasons of work, whether in the family or outside the home.
4. The government should ensure adequate provision of good employment opportunities to increase the income of parents. This will help reduce poverty and therefore reduce child labour to its minimum level.
5. NGOs and private organizations can work together to abolish child labour through awareness raising programmes, rehabilitation programmes, counselling programmes, and law enforcement.

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# Research On Circumstantial Factors Influencing The Initiation Of Tobacco Smoking In UT Chandigarh

Mohan Singh**\***, Dr. Monica Munjial Singh**\*\***

## ABSTRACT

*This study explores the factors driving tobacco initiation in UT Chandigarh, emphasizing global tobacco prevalence, economic implications, and health risks. Chandigarh's tobacco use rate (13.7%) surpasses Punjab's, with 12.9% initiating before age 15. Influences include curiosity, peer pressure, and media exposure, particularly among those with lower education levels and in group settings. Objectives encompass identifying initiation ages, analyzing contributing factors, and understanding the initiation circumstances. The methodology combines surveys, quantitative-qualitative analysis, and analytical research, yielding recommendations for education, sales regulations, stress management, and awareness campaigns to mitigate initiation, empower youth, and bolster public health.*

*Keywords: Tobaco Control, Smoking, Public Health*

## INTRODUCTION

Approximately 1.3 billion people across the globe use tobacco products, with 80% of them residing in low- and middle-income nations. Tobacco usage exacerbates poverty by redirecting household funds away from essential necessities like food and shelter due to its addictive nature. This pattern is challenging to break, and it also results in premature mortality and disability among working-age adults in households, leading to reduced household income and heightened healthcare expenses. Besides its detrimental health effects, the overall economic toll of smoking, including health expenditures and productivity losses, is estimated at approximately US$ 1.4 trillion annually. This figure is roughly equivalent to 1.8% of the world's yearly gross domestic product (GDP), with nearly 40% of this cost being borne by developing nations, underscoring the significant burden these countries face.

### KEY FACTS

- Tobacco claims the lives of up to half of its users.
- Each year, tobacco is responsible for over 8 million deaths, including 1.3 million non-smokers exposed to second-hand smoke.
- More than 80% of the world's 1.3 billion tobacco users reside in low- and middle-income nations.
- In 2020, tobacco use was prevalent among 22.3% of the global population, with 36.7% of men and

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7.8% of women using tobacco.

- To combat the tobacco epidemic, WHO Member States adopted the WHO Framework Convention on Tobacco Control (WHO FCTC) in 2003, which has been ratified by 182 countries.
- The WHO MPOWER**\*** measures align with the WHO FCTC (Framework Convention on Tobacco Control) and have proven effective in saving lives and reducing healthcare costs.
- MPOWER is a policy package intended to assist in the country-level implementation of effective interventions to reduce the demand for tobacco.

## PREVALENCE OF TOBACCO USE IN CHANDIGARH

The prevalence of tobacco usage in Chandigarh stood at 13.7 percent, slightly exceeding Punjab's 13.4 percent rate (3.1). Among the 13.7 percent of tobacco users, 23.3 percent are male, while 1.7 percent are female (3.2). According to this report, 7.6 percent exclusively use smoked tobacco, 4.3 percent use smokeless tobacco, and 1.8 percent use both smoked and smokeless tobacco, accounting for the entire 13.7 percent of tobacco users (3.3).

According to the GATS 2 report, there has been a decline in tobacco usage in Chandigarh when compared to the GATS 1 survey conducted in 2009-10. In 2009-10, the prevalence of smoking tobacco use in Chandigarh was 11 in GATS 1, but by 2016-17, it had decreased to 9.4. Conversely, the prevalence of smokeless tobacco use has risen from 5.4 percent in 2009-10 to 6.1 percent in 2016-17 (3.4). Another notable discovery from Chandigarh, as presented in GATS-2, is that 12.9% of tobacco users began using tobacco before the age of 15, surpassing the national average of 12.2% in India. More specifics on this matter are outlined below (3.5).

| Country/UT | Age at tobacco product initiation | | | |
|---|---|---|---|---|
| | <15 | 15-17 | 18-19 | 20-34 |
| India | 12.2 | 23.6 | 19.4 | 44.7 |
| Chandigarh | 12.9 | 19.8 | 9.9 | 57.5 |

Table A:   Percent distribution of ever daily tobacco users aged 20-34 by age at tobacco use initiation according to states/UTs, GATS 2 India, 2016-17

## PROJECT DETAILS

Tobacco products contain not only the addictive substance nicotine but also numerous harmful chemicals. Utilizing tobacco in any form can result in addiction, substantial health problems, and untimely mortality. Tobacco is employed through various methods, including smokeless

forms like chewing tobacco and snuff, as well as smoked forms such as hookah or water pipe, cigars (large cigar, cigarillo, or little cigar), bidis, or cigarettes.

Aside from its connection to cancer, smoking also contributes to lung conditions like chronic bronchitis and emphysema. Furthermore, it has been noted to worsen asthma symptoms in both adults and children. Notably, cigarette smoking stands as the primary risk factor for Chronic Obstructive Pulmonary Disease (COPD). Survival data underscores that quitting smoking can lead to the gradual restoration of much of the lung damage caused by smoking over time (National Institute of Drug Abuse) (4.1).

**Background of Tobacco usage:**

According to the World Health Organization (WHO), if present patterns persist, tobacco consumption will result in the annual deaths of over 8 million individuals globally by 2030. It is projected that 80% of these untimely fatalities will impact residents of low- and middle-income nations. Without immediate intervention, tobacco use could claim the lives of a billion people or more during the 21st century. In line with a report from the Indian Council of Medical Research (ICMR), almost half of male cancer cases and a quarter of female cancer cases in India can be directly linked to tobacco use (5.1).

In 2019, smoking tobacco use caused 7.69 million deaths and 200 million disability-adjusted life-years worldwide, making it the primary cause of death among males (20.2% of male deaths). Of the 7.69 million deaths linked to smoking tobacco use, 6.68 million (86.9%) occurred among current smokers (6.1).

The proposed project aims to understand the major and minor factors and circumstances that trigger the initiation of tobacco smoking. The results will contribute to the development of policies aimed at reducing smoking initiation by eliminating these factors and equipping youth with knowledge. With this information, they can navigate situations and make informed choices regarding drug use, ultimately ensuring a drug-free life.

# THE RATIONALE FOR THE STUDY

The vision of the study is to prevent drug abuse at its core. It will influence education policies and offer knowledge, skills, and attitudes for wholesome living. This endeavor seeks to cultivate responsibility in drug usage and establish links to personal and collective actions, both now and in the future.

# OBJECTIVES

- To study the age period when people take their initial step into smoking.
- To investigate the significant and minor factors that contribute to the first-time initiation of smoking.
- To analyze the significant and minor situations prompting individuals to start smoking for the first time.

## METHODOLOGY
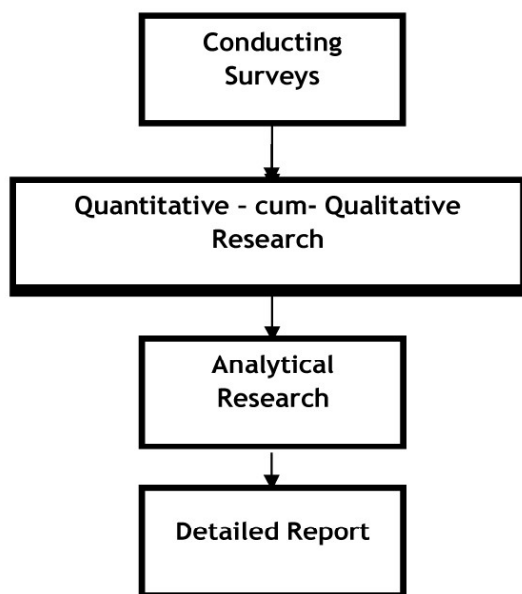


| Method | Quantitative cum Qualitative Research – Interview /focus group. |
|---|---|
| Study Design | Primary Study |
| Personal Interview from the smoking tobacco users in UT Chandigarh | 25-30 (proposed) |
| Study Setting | UT, Chandigarh |

## STUDY TOOL

A semi-structured interview schedule was employed to gather the necessary information. Respondents were posed open-ended questions. The interview schedule comprised two sections. The first section focused on gathering information about the participants' socio-demographic profiles, while the second section aimed to gather details about their personal experiences with smoking tobacco. The interview schedule underwent pre-testing, and necessary adjustments were incorporated during the survey process.

## DEMOGRAPHIC PROFILE OF THE HANDIGARH.(7.1)

Table C:

| UT | Chandigarh |
|---|---|
| Actual Population | 1,055,450 |
| Males | 55% |
| females | 45% |
| sex ratio | 818 females for every 1,000 males |
| literacy rate | 86.77% |

As per 2011 India census.(7.1)

| Description | Census 2011 |
|---|---|
| Density/km2 | 9,258 |
| Area(Km2) | 114 |
| Area mi2 | 44 |
| Total Child Population (0-6 Age) | 119,434 |
| Male Population (0-6 Age) | 63,536 |
| Female Population (0-6 Age) | 55,898 |

Chandigarh is administered by the Municipal Corporation, falling within the Chandigarh Metropolitan Region and situated in the Indian state of Chandigarh. According to provisional Census India data, the 2011 population of Chandigarh stood at 961,587, comprising 525,629 males and 435,958 females. While the city itself has a population of 961,587, its urban/metropolitan population totals 1,026,459, with 563,513 males and 462,946 females. **(7.1)**

It's noteworthy that Chandigarh achieved the distinction of becoming India's first smoke-free city on July 15, 2007. This Union Territory exhibits significant disparities in tobacco use prevalence and the enforcement of tobacco control measures, coupled with a low-to-moderate level of commitment to tobacco control within its political and administrative spheres. The primary objective of the proposed project was to establish an institutional framework for curbing the initiation of smoking tobacco. To effectively combat smoking tobacco misuse within the city, it is imperative to prioritize the protection of minors to prevent them from adopting such habits.

## DATA ANALYSIS

The participant-wise data from the field survey was incorporated into the Excel spreadsheet. The data was then reviewed, ensuring accuracy and completeness by cross-referencing it with the field survey records. Subsequently, a comprehensive analysis of all responses was conducted, involving the utilization of filter options to examine the various responses collected from the 32 respondents. Following this, the "insert chart" option was employed to visually represent the information through analytical graphs.

### A. Personal profile – 9 questions
### A(1). Age

It is submitted that for this study, survey forms have been filled out through personal interviews with each participant. Out of which, 62.5% were in the age group of 15-20 years, 34.38% were in the age group of 26-35 years, and 3.13% participants were in the age group of 36-45 years. The survey has focused on youth participation, which helps in studying the current trends of tobacco smoking initiation among young people.

| Particulars | Percentage |
|---|---|
| 15-25 year | 62.5 |
| 26-35 year | 34.38 |
| 36-45 year | 3.13 |

### A(2). Gender

Out of the total participants, 94% were male, and 6% were female participants. This was one of the limitations of the project, as females showed very low participation. Additionally, it was observed that many females tended to smoke in private or at home, avoiding smoking in public spaces. Furthermore, both female participants shared that anxiety and stress were their reasons for initiating smoking. The limitations of this study included a small sample size and a female gender representation of only 6%, which prevented a comprehensive comparison of gender differences.

### A(3). Education Qualification:

The maximum participants were graduate pass outs, comprising 41%, while

postgraduates and above constituted 12%. Those who passed secondary and higher secondary made up 28%, below secondary constituted 13%, and 6% of participants had not received any formal schooling. It was observed that, in comparison with responses to question 10, the trend indicated that the lower the education level, the younger the age at which smoking tobacco was initiated."

## A(4). Occupation:

41% of participants were Non-Government employees, 34% were students, 19% were self-employed (daily wage earners), and 6% were Government employees who participated in the survey. Among the 34% of student participants, it was observed that 70% were smoking tobacco on a daily basis, which was very disturbing.

## A(5). Socio – economic status:

The maximum number of participants belonged to the Lower Middle Class, comprising 38%. Slightly fewer, 34% were from the upper middle class, while 22% were from Below the Poverty Line (BPL), and 6% belonged to the Above Poverty Line category. In comparison with the responses to question no. 5, only one participant from a BPL family had received education up to the secondary level. The remaining BPL participants had received education below the secondary level.

## A(6). Family Type:

63% belong to Nuclear families, 34% to Joint families, and 3% live alone. Recent trends show a rise in nuclear families and a decline in joint family cultures, compared to responses in question 12. Among participants who began smoking out of personal experimentation, 77% were from Nuclear families.

## A(7). Religion:

Out of the total participants, 97% belonged to the Hindu community, and 3% belonged to the Sikh community. According to the 2011 census report in Chandigarh, the population consisted of 80.71% Hindus, 13.11% Sikhs, 4.87% Muslims, and rest from other communities. Thus, the study's data exhibited consistency with the reported figures, indicating the survey's reliability. **(7.1)**

## A(8). Marital status:

Out of the total participants, 84% were single, 13% were married, and 3% were divorced. Based on the observed trend, it was evident that unmarried youth were most impacted by the initiation of tobacco smoking, necessitating early interventions at the school and college levels.

## A(9). Native Place:

| Particulars | Percentage |
| --- | --- |
| Chandigarh | 21.88 |
| Delhi | 3.13 |
| Haryana | 6.25 |
| Himachal Pradesh | 37.50 |
| Jammu & Kashmir | 3.13 |
| Madhya Pradesh | 3.13 |
| Punjab | 3.13 |
| Uttar Pradesh | 15.63 |
| not answered | 6.25 |

As shown in the above table, the participants hailed from various northern states of India. Conducting the survey in Chandigarh, UT, was advantageous, as it facilitated researchers in reaching out to participants from a wide range of northern Indian states, thereby enhancing the value of the study's scope.

A. Survey Questionnaires – 16 questions

## B(1). Age at First Tobacco Smoking Experience:

Out of the total participants, 19% initiated smoking when they were below 15 years old. Among these, 17% had completed their metric education, 67% had education below completion of secondary school, and 17% had no formal schooling. Notably, all of these participants were from a Below Poverty Line (BPL) socioeconomic status. Conversely, participants who began smoking after the age of 15 were predominantly at least high school graduates, with many holding graduate and postgraduate degrees.

| Particulars | Percentage |
|---|---|
| Below 15 years of age | 18.75 |
| 15 to 20 years of age | 43.75 |
| 20-25 years of age | 34.38 |
| 25-30 years of age | 3.13 |
| 30-40 years of age | 0.00 |
| Above 40 years of age | 0.00 |

## B(2). Initial Smoking Circumstances:



| | 1 |
|---|---|
| Tried alone | 25 |
| In group | 75 |
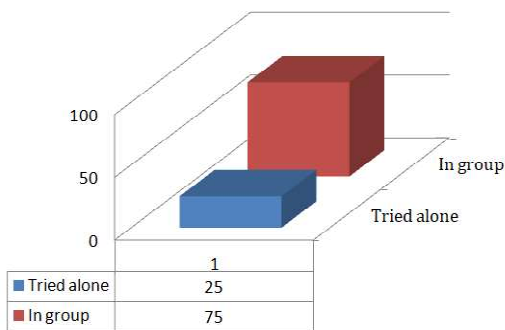
Out of the total participants, 75% initiated smoking within a group, while 25% tried it alone for their initial experience. Therefore, it was necessary to furnish young individuals with factual information concerning drug abuse and equip them with skills for managing real-life situations when in a group and faced with the prospect of initiating tobacco smoking.

## B(3). Initial Smoking Motivation:

19% of participants, including both female participants, selected depression/stress/anxiety as the reason for their initial smoking. Additionally, 28% of participants chose peer pressure as their reason for starting to smoke.

A significant 41% stated that personal experimentation drove their initial smoking experience. Notably, one participant shared that he smoked for the first time to prepare for a smoking role in a movie audition.

When compared with response of question no. A(6), it was observed that out of participants who initiated smoking due to personal experimentation, 77% belonged to Nuclear Families. The primary reasons for smoking initiation were self-fun, peer pressure, and depression/stress/anxiety.

## B(4). Pre-Smoking Substance Use History:
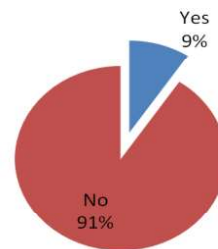


91% of participants responded that they had not used any other drugs prior to starting smoking. Only 9% of participants had used another drug before beginning

smoking, and all three had initiated with alcohol.

B(5). Influential Introduction to Smoking: Sixty-two point five percent of participants shared that they had been introduced to smoking by others, with 95% of those indicating peers and 5% pointing to relatives. Thirty-four percent responded that they had experimented with smoking on their own. Consequently, it's important for youth to receive counseling, fact-based information about the health effects of smoking tobacco, particularly at the school and college levels. This will empower them to make informed decisions when faced with the prospect of being introduced to smoking by peers or relatives.

B(6). Initial Awareness of Smoking's Harmful Effects:



| | Yes | No | Partially aware |
|---|---|---|---|
| Percentage | 28.13 | 53.13 | 18.75 |
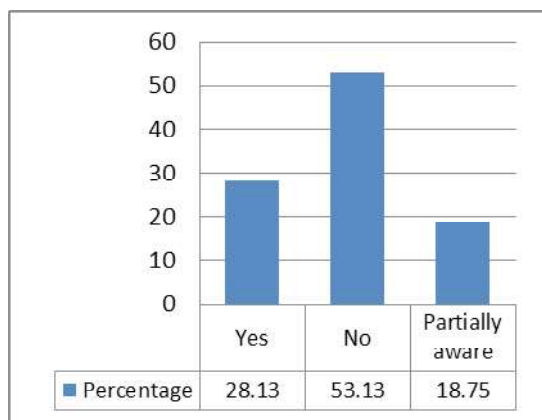
Only 28% of participants shared that they were aware of the harmful effects of smoking tobacco on their body and mind when they first tried smoking, while 19% had partial awareness. A significant 53% of participants admitted to not being aware of the harmful effects of smoking tobacco when they initiated it. This underscores a current lack of formal education and awareness provided to the youth. Therefore, it is crucial to undertake extensive efforts to increase awareness about the dangers of tobacco smoking and its adverse impact on youth health.

B(7). Student Awareness of Tobacco Dangers in Education:
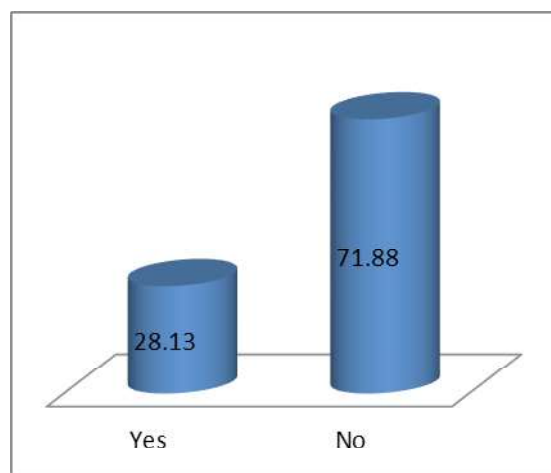


Seventy-two percent had not received education about the dangers of smoking tobacco use during their time in school or college. Only 28% of participants agreed that they had been taught about the hazards of smoking tobacco in educational institutions.

This suggests that adequate efforts were still not being invested at the school and college levels to provide formal education that could empower youth to lead drug-free lives.

B(8). Initial Tobacco Smoking Frequency:

| Per day basis | Weekly basis | Monthly basis |
|---|---|---|
| 15.63 | 37.50 | 46.88 |

Out of the total participants, 47% began smoking tobacco on a monthly basis, 38% on a weekly basis, and only 16% started on a daily basis.

## B(9). Current Smoking Frequency:

| Per day basis | Weekly basis | Monthly basis | Not answered |
|---|---|---|---|
| 71.88 | 15.63 | 6.25 | 6.25 |

As shown in the above table, a significant number of participants, 72%, were smoking tobacco on a daily basis. Sixteen percent were smoking weekly, and 6% were smoking monthly. Compared to question no. 8, the daily smoking habits had increased by 78.29%, clearly indicating a heightened dependence on smoking over time.

## B(10). Concerns About Future Health Damage from Tobacco Smoking:

| Particulars | Response (in %) |
|---|---|
| Not At All Worried | 9.38 |
| A Little Worried | 25 |
| Moderately Worried | 25 |
| Very Worried | 9.38 |
| Don't Know | 0 |
| Not answered | 31.25 |

Nine percent of participants admitted that they were not at all concerned about the adverse effects of smoking tobacco on their future health. Twenty-five percent were slightly worried, and the same percentage expressed moderate concern about these effects. Nine percent of participants were highly worried about the ill effects of smoking tobacco on their future health. Additionally, 31% of participants did not provide an answer to this question.

## B(11). Perceived Ease of Quitting Smoking Tobacco:

| Particulars | Response (in %) |
|---|---|
| Very Easy | 25 |
| Somewhat Easy | 9.38 |
| Neither Easy Nor Hard | 9.38 |
| Somewhat Hard | 15.63 |
| Very Hard | 12.5 |
| Don't Know | 0 |
| Not answered | 28.13 |

Twenty-five percent of participants admitted that quitting smoking tobacco would be very easy for them if they wanted to. Nine percent of participants stated it would be somewhat easy, and the same number said it would be neither easy nor hard for them to quit if desired. Sixteen percent of participants found it somewhat hard, and 13% admitted that it would be very hard for them to quit using smoking tobacco if they decided to.

B(12). Legal Smoking Age in India:
Currently, the legal smoking age in India is 18, and there's a proposal by The National Commission for Protection of Child Rights (NCPCR) to raise it to 21, aiming to safeguard young adolescents from addiction. To assess participant awareness about India's current legal

smoking age, this survey question was included. As per the responses, 44% answered correctly, while 54% were unaware. 6% responded with 20 years, 19% with 21 years, 13% with 25 years, and 6% admitted not knowing the legal age. 13% participants left this question unanswered.

B(13). Influential Factors for Initiating Tobacco Smoking:
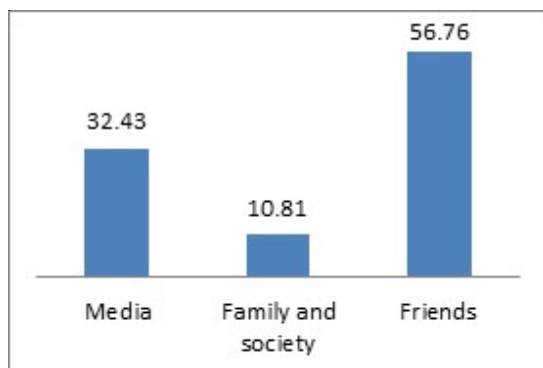


Based on the responses received, media held a 32% influence rate in encouraging youth to initiate smoking tobacco. Family and society collectively held an 11% influence rate, while friends circle held the highest influence rate at 57% for starting smoking tobacco among the youth.

B(14). Opinions on Tighter Regulations for Underage Tobacco Use:
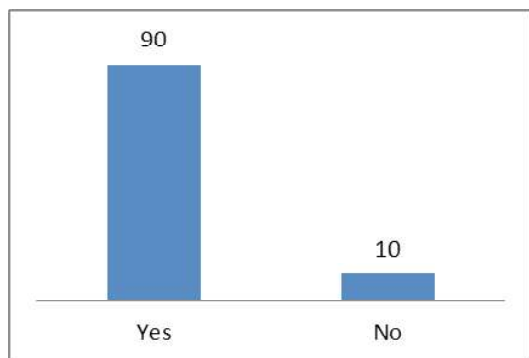


90% of participants agreed that more rules should be implemented to restrict the use of underage (minor) tobacco smoking.

B(15). Educational Awareness and Youth Habit Prevention:
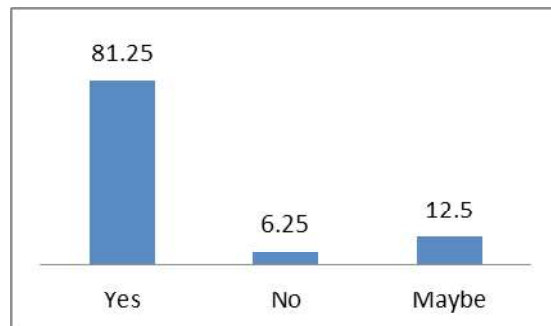


81% of participants agreed that with proper educational awareness & sensitization of the youth, they will not fall into such habits, while 13% submitted that with proper educational awareness and youth sensitization, they might avoid such habits. Six percent of participants denied this.

B(16). Suggestions received from the Participants.

The suggestions provided by the participants hold vital importance as they are experiencing the challenges firsthand. The participants have emphasized the following interventions:

1. **Cutting availability:** Many participants recommended imposing a complete ban on smoking tobacco in India to reduce its availability.
2. **Price hike:** Increasing the price of smoking tobacco was suggested to lower demand for such products.
3. **Licensed shops:** Participants proposed selling tobacco-related items only through licensed shops, following strict selling regulations. **4.**

**Role of parents and society:** The crucial role of parents was highlighted; they can guide their children toward a drug-free life. Strong family bonds can prevent minors from falling into drug habits.

5. **Awareness sessions:** Numerous suggestions were made to provide youth with awareness about drug abuse before they start using. They should be educated about tobacco abuse's negative impact on health to make informed decisions about avoiding drugs. Additionally, teaching coping mechanisms for anxiety and stress was advised.

6. **Cartoon movies:** For mass awareness campaigns, special cartoon movies could be employed.

# RESULT

- Self-Fun (41%), peer pressure (28%) and depression/stress/anxiety (19%) are the three major reasons for smoking initiation {Response of Question – B(3)}.

- Majority of participants (75%) have initiated smoking in group setting {Response of Question – B(2)}.

- Low education level is responsible of the smoking initiation in the early age i.e. (less than 15 years of age) {Response of Question – B(1)}.

- Majority of participants 72% have not received any formal education regarding the dangers of smoking tobacco use {Response of Question – B(7)}.

- Only 16 % initiated smoking tobacco on per day basis but currently 72% participants are per day users which indicate the increased dependency on per day use of smoking tobacco by 78% {Response of Question – B(8) & B(9)}.

- 57% friend circle and 32% media are the major influencers {Response of Question – B(13).

- 90% participants think that more rules should be implemented to restrict the usage of underage (minor) smoking tobacco abuse. {Response of Question – B(14).

- 81% participants think that with proper educational awareness & sensitization of the youth, they will not fall into such habits {Response of Question – B(15).

# RECOMMENDATIONS

1. Education policies to be developed/ amended to improve the literacy rate of UT, Chandigarh to 100% which is 86.42 percent, 90.26% for males and 81.65.46 for females (as per the 2011 census report), and special focus should be made on the children of the families those comes under BPL (Below Poverty line) – a reference to the finding s of the response of question B(1).

2. Strict rules and regulations related to the selling and promotion of smoking products should be made and applicable rules should be implemented strictly on the ground. Special focus should be made not to sell the products to the minors i.e. 18 years so age or lower. – a reference to the findings of the response of question B(14) and Suggestions received from the Participants {B(16)}. Further, clear messages related to health hazards should be displayed in such shops and

smoking tobacco products as per the rule.

3. All the sellers of tobacco products should be notified to abide by the law and further constant scrutiny shall be conducted. If found non-compliant after warning, their license for the sales shall be canceled. – a reference to the  Suggestions received from the Respondents {B(16)}.

4. Special physiological awareness sessions should be organized for the youth so that they should be taught well how to cope with anxiety/ stress in their lives and not choose these drugs as an option to handle their stress/anxiety. – a reference to the findings of response of question B(3)and Suggestions received from the Participants.

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