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OCCUPATIONAL HEALTH IMPACT OF STONE CRUSHER UNITS ON ITS WORKERS IN VIRUDHUNAGAR DISTRICT OF TAMIL NADU

S. Ganesan
Associate Professor and Head, Department of Economics and Centre for Research
Ayya Nadar Janaki Ammal College (Autonomous), Sivakasi, Tamil Nadu

V. Marichamy
Ph.D., Research Scholar, Department of Economics and Centre for Research
Ayya Nadar Janaki Ammal College (Autonomous), Sivakasi, Tamil Nadu

Abstract

Stone Crushing unit is an important industrial sector in the country engaged in producing of various sizes depending upon the requirement which acts as raw material for various construction activities such as construction of Roads, Highways, Bridges, Buildings and Canals etc. It is estimated that there are over 12,000 stone crusher units in India. In India, the Stone Crushing Industrial sector is estimated to have an annual turnover of Rs.5000 crore (equivalent to over US$ 1 billion) and is therefore an economically important sector. This sector is estimated to be providing direct employment to over 500,000 people engaged in various activities such as mining, crushing plant, transportation of mined stones and crushed products etc. Most of these personnel working in stone crushing units are from rural and economically backward areas where employment opportunities are limited and therefore it carries greater significance in terms of social importance in rural areas. It is a source of earning for uneducated, poor and unskilled rural people.

Employing modern technology and mass production of crushed stone will create enormous amount of dust and spread through air and contribute air pollution. In hailing of polluted air with fine dust particles affects the health of the workers working in stone crushing units in particular and common people in general. It not only affects the health of human beings but also it will affect the growth of agricultural crops, contaminate the fertility of the soil and makes the land unfit for cultivation. Even though the stone crushing units contribute more to employment opportunities both directly and indirectly, skilled and unskilled employment to both the rural and urban people, at the same time we can't forget its health and environmental impact. Hence the present study aims to analyse the health impact of stone crusher units on its workers. In the study area due to environmental pollution by stone crushing units, 36 per cent of the workers are affected with disease like eye irritation, asthma, chest pain, TB etc. Among these disease eye irritation, asthma and skin allergy are vital among stone crushing workers. Nearly 50 per cent of the workers are not using proper protective devises. Out of this, 30 per cent of them are not using any devices to protect them from dust pollution.

Introduction

Stone Crushing unit is an important industrial sector in the country engaged in producing of various sizes depending upon the requirement which acts as raw material for various construction activities such as construction of Roads, Highways, Bridges, Buildings and Canals *etc*. It is estimated that there are over 12,000 stone crusher units in India. In India, the Stone Crushing Industrial sector is estimated to have an annual turnover of Rs.5000 crore (equivalent to over US$ 1 billion) and is therefore an economically important sector. This sector is estimated to be providing direct employment to over 500,000 people engaged in various activities such as mining, crushing plant, transportation of mined stones and crushed products *etc*. Most of these personnel working in stone crushing units are from rural and economically backward areas where employment opportunities are limited and therefore it carries greater significance in terms of social importance in rural areas. It is a source of earning for uneducated, poor and unskilled rural people. These stone crushers though socio-economically an important sector. Its impact is causing concern not only the employees working in the plant but also the surrounding areas. During the stone processing

the main hazard is dust which damages the environment inside the factory particularly greats havoc for the health of its workers. Occupational health is an essential part of the working conditions, since, most of the health problems occur among workers exposure to unhealthy substances like stone crusher dust. In this paper, an attempt has been made to analyse the occupational hazardous due to stone crusher dust pollution and awareness among workers.

Review of Literature

Ahanger, F.A., have made a study on "Impact of road dust polluted mulberry Leaves on the food ingestion, assimilation and conversion efficiency of Silkworm, Bombyx Mori L. in Kashmir Valley". Rohith, S., has conducted a study on "Vehicular pollution important reason for rise in asthma case in Madurai". Waseem. S et al., have undertaken a study on "Effects of indoor air pollution on human health: a micro-level study of Aligarh City-India". Ilyas, M and Raheed, F.,have carried out a study on "Health and environment related issues in stone crushing in Pakistan". Sarala Thambavani, D., has scientific study on "Assessment of ambient air quality in Virudhunagar Town, Tamil Nadu". Gamal, H.M., has conducted a study on "Respiratory problems among workers exposed to quarries dusts in El - Minia Governorate". Sinha, B.K and Choudhary, S., have undertaken a study on "Environmental Pollution and Health Hazards". Rana, S.V.S., has carried out a study on "Environmental pollution: health and toxicology".

Statement of the Problem

In olden days the stones used for construction purposes are produced by using manpower. Due to increase in the demand for construction materials, now-a-days people using machine power to produce the same. Most of the stone crusher units are located along the periphery of cities because it needs electricity, road facilities and manpower resources. Employing modern technology and mass production of crushed stone will create enormous amount of dust and spread through air and contribute air pollution. Inhaling of polluted air with fine dust particles affects the health of the workers working in stone crushing units in particular and common people in general. It not only affects the health of human beings but also it will affect the growth of agricultural crops, contaminate the fertility of the soil and makes the land unfit for cultivation. Even though the stone crushing units contribute more to employment opportunities both directly and indirectly, skilled and unskilled employment to both the rural and urban people, at the same time we can't forget its environmental impact. Further, the stone crushing units contribute adequate amount to the GDP also. Stone crushing units have its triangular impact on employment, income and health. An old saying that "health is wealth". "Health is lost everything is lost". In the view of human beings, health is more important than wealth. Analyzing the triangle impact, preference towards health is vital than the other. Hence, there is a need at this juncture to undertake a study on "Occupational Health Impact of Stone Crusher Units on its Workers in Virudhunagar district of Tamil Nadu.

Objective of the Study

The following are the main objectives of the study

- To analyse the health problems of workers working in stone crushing units.
- To find out the reasons for not using protective measures during working hours.
- To identify the dust protection measures followed by the workers working in the stone crushing units.

Sampling Design

The study was conducted in Virudhunagar District of Tamil Nadu. Totally 51 registered stone crushers are functioning in the study area. From every stone crusher units, there are 16 sample workers were taken. Hence, the total number of samples picked out from the population was 128. They were interviewed and collected the required information.

Tools of Analysis

The tools used to analyze the data are

- Percentage
- Cross table and
- Chi-square test.

Analysis

Distribution of the Workers Based on Category of Work and Section

Normally the workers are classified into skilled, semi-skilled and unskilled. Each and every section in the industry is having these three categories of workers. The researcher has classified the workers working in stone crushing units based on different category and various sections and the same is shown in Table 1.

Table 1: Distributions of Workers Based on Category OF Work and Section

S. No.	Category / Section	Skilled	Semi-skilled	Unskilled	Total
1.	Accountant	3	1	7	**11 (8.6)**
2.	Driver	13	4	1	**18 (14.1)**
3.	Mechanic	16	6	3	**25 (19.5)**
4.	Operator	25	8	-	**33 (25.8)**
5.	Helper	8	7	-	**15 (11.7)**
6.	Welder	9	3	-	**12 (9.4)**
7.	Others	12	1	1	**14 (10.9)**
Total		**86 (67.2)**	**30 (23.4)**	**12 (9.4)**	**128 (100)**

Source: Survey Data

Table 8.1 Shows that out of 128 workers, 86 are skilled which is 67.2 per cent, 30 are semi-skilled which is 23.4 per cent and 12 are un-skilled which is 9.4 per cent of the total. While speaking about section-wise category of the workers, it shows that in accounts section, there are three skilled workers, one semi-skilled worker and seven unskilled workers. In driver section, there are 13 skilled workers, four semi-skilled workers and one unskilled worker. In mechanic section there are 16 skilled workers, six semi-skilled workers and three unskilled workers. In operator section there are 25 skilled workers, eight semi-skilled workers and there is no unskilled worker. In helper section, there are eight skilled workers, seven semi-skilled workers and no unskilled workers. In welder section there are nine skilled workers, three semi-skilled workers and none un-skilled worker. Under 'others' category there are 12 skilled workers and each one semi-skilled worker and un-skilled worker.

Distribution of the Workers Based on Years of Experience

Experience makes the man perfect. Experienced person perform the work in a better manner compared to the untrained workers. Further, the years of experience is very much useful in finding out the health impact. In this manner Table 2 clearly shows the classification of the workers on the basis of years of experience.

Table 2: Distributions of the Workers on Based on Years of Experience

S. No.	Section	Years of Experience				
		Below 3	3 – 6	6 – 9	Above 9	Total
1.	Accountant	7	5	1	3	**16**
2.	Driver	23	8	-	1	**32**
3.	Mechanic	7	6	1	2	**16**
4.	Operator	10	4	2	-	**16**
5.	Helper	10	6	-	-	**16**
6.	Welder	11	4	-	1	**16**
7.	Other	7	7	2	-	**16**
Total		**75 (58.6)**	**40 (31.2)**	**6 (4.7)**	**7 (5.5)**	**128 (100.0)**

Source: Survey Data

From Table 8.2 it is clear that out of 128 workers, 75 (58.6 per cent) workers have below three years of experience in this field. Another 40 (31.2 per cent) workers have an experience of three to six years. The remaining seven (5.5 per cent) and six (4.7 per cent) workers only have the experience of above nine years and six to nine years respectively. Section wise analysis reveals that in account section, seven workers have below three years of service, five workers are having

three to six years of service, one worker is having six to nine years of service and three workers only have above nine years of service. In driver section, 23 workers have below three years of service; eight workers have three to six years of service and one worker alone has above nine years of service. In mechanic section, seven workers are having below three years of service, six workers have three to six years of service, one worker alone has six to nine years of service and two workers are having above nine years of service. In operator section, 10 workers have an experience of below three years, four workers have three to six years of service and two workers have six to nine years of service. In helper section, 10 workers have below three years of experience; six workers have three to six years of service. In welding section, out of 16 workers, 11 workers are having below three years of service, four workers have three to six years of service and the remaining one worker has above nine years of service and other section, each seven workers have below three and three to six years of experience and the remaining two workers have six to nine years of experience. The workers who directly link with dust pollution are the workers working in mechanical section, operators, helper and welders. All these sections, more than 50 per cent of the workers are having below three years of service. This frequent shift in job transferently tells negative impacts of health of rusher workers.

Distribution of the Workers Based on the Personal Habits

Good habits lead to good health and *vice versa*. In this regard, personal habits of the workers apart from the work environment play a vital role in assessing the health conditions of the workers. The distribution of the workers according to the personal habits is presented in Table 3.

Table 3: Distribution of the Workers Based on Personal Habits

S. No.	Personal Habits	Yes	No
1	Smoking	83 (64.84)	45 (35.16)
2	Consume Liquor	97 (75.78)	31 (24.22)
3	Pawn	40 (31.25)	88 (68.75)
4	Tobacco	26 (20.31)	102 (79.69)

Source: Survey Data

It is observed from Table 8.3 that out of 128 workers, 83 (64.84 per cent) workers are having smoking habits and the remaining 45 (35.16 per cent) workers are non-smokers. Consuming liquor is witnessed among 97 (75.78 per cent) workers out of 128 workers studied. Pawn and Tobacco chewing habits is witnessed among 40 (31.25 per cent) and 26 (20.31 per cent) workers. It is concluded that all the workers are having either one or more than one habits like smoking, using liquor and chewing tobacco products.

Section-Wise Classification of Workers Using Protective Device

Protective device plays a vital role in protecting the workers from dust pollution. In this regard the researcher wants to know about the habit of using protective devices during working hours among the stone crusher workers in the study area. Accordingly, the researcher has collected information, analysed and the same is shown in Table 4.

Table 4: **Distribution of the Worker Based on the Used and Not Used for Protective Measures in Section**

S. No.	Section	Protective Measures Used	Not used for Protective Measures	Total
1	Accountant	10	6	**16**
2	Driver	13	19	**32**
3	Mechanic	9	7	**16**
4	Operator	12	4	**16**
5	Helper	10	6	**16**
6	Welder	16	-	**16**
7	Other	5	11	**16**
Total		**75 (58.6)**	**53 (41.4)**	**128 (100)**

Source: Survey Data

It is understood from Table 8.4 that out of 128 workers studied, 75 (58.60 per cent) workers are using protective devices during working hours and the remaining 53 (41.40 per cent) workers are not having the habit of using protective devices in the study area. It is evident that nearly 40 per cent of the respondents are not having heath awareness and not having the practice of using protective devices during working hours. It seems that they have not taken any steps to protect themselves from stone crusher dust pollution. Further, among the different category of workers, operators and helpers should wear protective devices. But in the study area out of 16, four operators and out of 16, six helpers are not having the practice of using protective device to protect themselves from dust pollution. It should be taken care off.

Distribution of Workers on the basis of Dust Protection Devises Used

In Crusher units the dust flows continuously due to its working process. Hence, to avoid health risk the workers should use protective devices and safeguard themselves from dust inhale. In this regard, the researcher collected information regarding the protective devices used and the same is shown in Table 5.

Table 5: Distribution of the Workers on the Basis of Dust Protection Devises Used

S. No.	Section	Hand Kerchief	Mask	Helmet	Glass	Total
1	Accountant	8	2	-	-	**10**
2	Driver	9	4	-	-	**13**
3	Mechanic	7	2	-	-	**9**
4	Operator	3	3	6	-	**12**
5	Helper	7	1	2	-	**10**
6	Welder	3	-	-	13	**16**
7	Others	3	2	-	-	**5**
Total		**40**	**14**	**8**	**13**	**75**

Source: Survey Data

It is inferred from Table 8.5 that out of 75 workers, 40 workers are using hand kerchief as protection device. But it is not a proper device to avoid dust in stone crusher units. Only 14 workers are using mask to protect themselves from dust pollution. Eight workers are using helmets as protective device and the remaining 13 workers are using glass as protective device to protect themselves from dust pollution. Hence, awareness and compulsion is needed in this regard, to protect the workers from dust problems.

Reasons for Non-using Protective Devices

Nearly 40 per cent of the workers working in stone crushing units in the study area are not having the habit of using protective devices. Due to non-use of protective devices, the workers are exposure to dust pollution. Even though it is a well known fact, then why the workers are not using devices to protect themselves from dust pollution. This question arises in the minds of the researcher and the researcher wants to find out the reasons behind it. Accordingly, the researcher has collected information and the same is given in Table 6

Table 6: Reasons for Non-Using Protective Devices

S. No.	Section	Laziness	Forgotten	Inconvenient	Total
1	Accountant	1	2	3	**6**
2	Driver	1	5	13	**19**
3	Mechanic	3	3	1	**7**
4	Operator	1	2	1	**4**
5	Helper	3	1	2	**6**
6	Welder	-	-	-	**0**
7	Others	**5**	**3**	**3**	**11**
Total		**14 (26.41)**	**16 (30.19)**	**23 (43.40)**	**53 (100)**

Source: Survey Data

It is obvious from Table 8.6 that out of 53 respondents, 23 (43.40 per cent) respondents opined that due inconvenience in wearing protective devices they are not using. Another 14 (26.41 per cent) workers informed that due to laziness they are not using the devices. The remaining 16 (30.19 per cent) respondents are of the opinion that forgotten to bring the devices is

the reason behind the non-use of protective devices. The reasons given by the workers are invaluable. Hence, the stone crusher authorities make it compulsory and take efficient steps in this regard.

Distribution of the Workers Based on Diseases

To study the occupational health impact on workers by the stone crusher units, the researcher gathered information related to the disease by which the workers are affected and the same is pictuised in Table 7.

Table 7: Distribution of the Workers Based on Diseases

Section	Asthma	Chest Pain	TB	Eye Irritation	Backache	Allergy	Cough	Row Total
Accountant	1	1	-	1	-	2	1	**6**
Driver	-	-	1	1	3	2	1	**8**
Mechanic	1	1	2	3	4	2	-	**13**
Operator	5	2	3	11	1	4	1	**27**
Helper	1	-	1	2	-	4	2	**10**
Welder	3	1	1	-	1	2	-	**8**
Others	1	3	-	1	1	-	1	**7**
Column Total	**12**	**8**	**8**	**19**	**10**	**16**	**6**	**79**

Source: Survey Data

It is understood from Table 8.7 that out of 128 respondents studied, 79 (61.72 per cent) respondents are affected with disease due to dust. Out of 79 workers, asthma is witnessed in 12 workers. Each eight workers are affected by chest pain and TB. Nineteen workers are affected with eye irritation problem respectively. Among them 10 workers have affected in backache problem, 16 workers are affected with allergy problem and the remaining six workers affected by Cough complaint respectively. Due to dust pollution majority of the workers are affected with eye irritation problem.

Distribution of Workers Based on Disease Complaint for Number of Days absent per Month

The researcher wants to know about the average number of days the workers absent to work due to illness. Accordingly, the researcher has collected information and the same is shown in Table 8.

Table 8: Distribution of Workers Based on Disease Complaint for Average Number of Days Absent Per Month

S. No	Disease	Number of Days Absent per Month			Total Number of Workers Affected	Percentage to Total Worker Affected Absent (per Month)
		Below 2	2-4	Above 4		
1.	Asthma	3	4	5	12	**15.19**
2	Chest Pain	4	3	1	8	**10.13**
3.	Tuberculosis	-	7	1	8	**10.13**
4.	Eye Irritation	8	11	-	19	**24.05**
5.	Backache	6	4	-	10	**12.66**
6.	Allergy	4	6	6	16	**20.25**
7.	Cough	2	4	-	6	**7.59**
Total		**27 (34.18)**	**39 (49.37)**	**13 (16.45)**	**79 (100)**	**100.00**

Source: Survey Data

It is clean from Table 8.8 that out of 79 respondents who are suffered from works related illness, 39 (49.37 per cent) respondents absent to the work for two to four days. Out of this 19 (24.05 per cent) respondents are absent to work due to eye irritation. Twenty seven (34.18 per cent) respondents took leave below two days. The remaining 13 (16.45 per cent)

respondents took leave more than 4 days per month. Totally due to eye irritation, majority of the employees took leave.

Monthly Medical Expenses Met by the Workers

Every worker in the stone crusher units have been provided with free medical. Arranged by the owners of the firm is any problem arise. In addition to that, workers are taking treatment from the private hospitals also. This section is devoted to discuss the monthly expenses on medical treatment made by stone crusher unit workers in the study area is presented in Table 9.

Table 9: Distribution of Workers Based on Disease Complaint for Medical Expenses Per Month

S. No.	Disease	Medical Expenses per Month (in Rs)			Total Number of Workers Affected
		Below 500	500-750	Above 750	
1.	Asthma	4	2	6	12
2	Chest Pain	1	2	5	8
3.	Tuberculosis	2	2	5	8
4.	Eye Irritation	1	9	9	19
5.	Backache	2	1	7	10
6.	Allergy	3	9	4	16
7.	Cough	5	-	1	6
Total		**18 (22.78)**	**24 (30.38)**	**37 (46.84)**	**79 (100)**

Source: Survey Data

It is found from Table 8.9 that out of 128 workers studied, out of 79 workers as a illness to spent a medical expenses per month, 18 (22.78 per cent) workers spent a monthly expenses of below Rs.500/- as medical expenses. Another 24 (30.38 per cent) workers spent money ranging from Rs.500-750/- as medical expenses. The remaining 37 (46.84 per cent) workers spent money ranging from above Rs.750/- as medical expenses. It is understood from this Table that the arise medical expenses incurred by the workers ranging from Rs. above 750/- per month.

Chi-Square Test

In order to explore that whether the dust protection devices are effective are not, Chi- Square test was employed. The null hypothesis is given below.

H_0: Dust protection devises doesn't play a vital role in safe guarding the crusher workers.

Table 10: Chi-Square Test

S. No.	Particulars	Affected	Not Affected	Total
1	Protection Measure used	31	44	75
2	Not Used	48	5	53
Total		**79**	**49**	**128**

Source: Survey Data

Result

Calculated Value	Table Value*
31.86	3.841
Calculated Value > Table Value Reject H_0	

* at 5 per cent level of significance

Chi-square test is administered to test the null hypothesis. The estimated values are shown in Table 8.9. It is evident that the estimated value of the chi-square is 31.86. The Table value at five per cent level of significance is 3.841. It is concluded from the result that the calculated value of chi-square is greater than the table value at five per cent level. Hence, one can reject the null hypothesis and accept the alternative hypothesis.

H_a: Dust protection devices play a vital role in safe guarding the health of crusher workers.

Major Findings of the Study are as Follow

- Out of 128 workers, 86 (67.2 per cent) workers are Skilled, 30 (23.4 per cent) workers are semi

– skilled and 12 (9.4 per cent) workers are unskilled.

- Out 128 workers, 75 (58.6 per cent) workers have below three years of experience in this field. Another 40 (31.2 per cent) workers have an experience of three to six years. The remaining seven (5.5 per cent) and six (4.7 per cent) workers only have the experience of above nine years and six to nine years respectively. Section wise analysis reveals that in account section, seven workers have below three years of service, five workers are having three to six years of service, one worker is having six to nine years of service and three workers only have above nine years of service. In driver section, 23 workers have below three years of service; eight workers have three to six years of service and one worker alone has above nine years of service. In mechanic section, seven workers are having below three years of service, six workers have three to six years of service, one worker alone has six to nine years of service and two workers are having above nine years of service. In operator section, 10 workers have an experience of below three years, four workers have three to six years of service and two workers have six to nine years of service. In helper section, 10 workers have below three years of experience; six workers have three to six years of service. In welding section, out of 16 workers, 11 workers are having below three years of service, four workers have three to six years of service and the remaining one worker has above nine years of service and other section, each seven workers have below three and three to six years of experience and the remaining two workers have six to nine years of experience. The workers who directly link with dust pollution are the workers working in mechanical section, operators, helper and welders. All these sections, more than 50 per cent of the workers are having below three years of service. This frequent shift in job transferently tells negative impacts of health of rusher workers.
- Out of 128 workers, 83 (64.84 per cent) workers are having smoking habits and the remaining 45 (35.16 per cent) workers are non-smokers. Consuming liquor is witnessed among 97 (75.78 per cent) workers out of 128 workers studied. Pawn and Tobacco chewing habits is witnessed among 40 (31.25 per cent) and 26 (20.31 per cent) workers. It is concluded that all the workers are having either one or more than one habits like smoking, using liquor and chewing tobacco products.
- Out of 128 workers, 75 (58.60 per cent) workers are using protective devices during working hours and the remaining 53 (41.40 per cent) workers are not having the habit of using protective devices in the study area. It is evident that nearly 40 per cent of the respondents are not having heath awareness and not having the practice of using protective devices during working hours. It seems that they have not taken any steps to protect themselves from stone crusher dust pollution. Further, among the different category of workers, operators and helpers should wear protective devices. But in the study area out of 16, four operators and out of 16, six helpers are not having the practice of using protective device to protect themselves from dust pollution. It should be taken care off.
- Out of 75 workers, 40 workers are using hand kerchief as protection device. But it is not a proper device to avoid dust in stone crusher units. Only 14 workers are using mask to protect themselves from dust pollution. Eight workers are using helmets as protective device and the remaining 13 workers are using glass as protective device to protect themselves from dust pollution. Hence, awareness and

compulsion is needed in this regard, to protect the workers from dust problems.

- Out of 53 workers, 23 (43.40 per cent) respondents opined that due inconvenience in wearing protective devices they are not using. Another 14 (26.41 per cent) workers informed that due to laziness they are not using the devices. The remaining 16 (30.19 per cent) respondents are of the opinion that forgotten to bring the devices is the reason behind the non-use of protective devices. The reasons given by the workers are invaluable. Hence, the stone crusher authorities make it compulsory and take efficient steps in this regard.
- Out of 128 respondents studied, 79 (61.72 per cent) respondents are affected with disease due to dust. Out of 79 workers, asthma is witnessed in 12 workers. Each eight workers are affected by chest pain and TB. Nineteen workers are affected with eye irritation problem respectively. Among them 10 workers have affected in backache problem, 16 workers are affected with allergy problem and the remaining six workers affected by Cough complaint respectively. Due to dust pollution majority of the workers are affected with eye irritation problem.
- Out of 79 respondents who are suffered from works related illness, 39 (49.37 per cent) respondents absent to the work for two to four days. Out of this 19 (24.05 per cent) respondents are absent to work due to eye irritation. Twenty seven (34.18 per cent) respondents took leave below two days. The remaining 13 (16.45 per cent) respondents took leave more than 4 days per month. Totally due to eye irritation, majority of the employees took leave.
- Out of 128 workers studied, out of 79 workers as a illness to spent a medical expenses per month, 18 (22.78 per cent) workers spent a monthly expenses of below Rs.500/- as medical expenses. Another 24 (30.38 per cent) workers spent money ranging from Rs.500-750/- as medical expenses. The remaining 37 (46.84 per cent) workers spent money ranging from above Rs.750/- as medical expenses. It is understood from this Table that the arise medical expenses incurred by the workers ranging from Rs. above 750/- per month.

Suggestions

- Workers must be provided with proper protection devices like mask, helmet, glass *etc.,* to avoid dust problem.
- Steps should be taken by the Government and the stone crusher units to educate the workers and advise them to undergo periodical medical check-up. This will reduce the health problems.
- Various departments of the State and Central Governments, the employer, trade unions and the voluntary organizations should organize seminars, conferences, workshops and such other activities for the workers to create awareness on dust pollution.
- All workers should be enrolled their names with Government health schemes and insurance schemes. The premium amount should be paid by the employer not by the employee.
- Government hospital authorities should conduct free medical camps in the crusher units with periodic intervals to avoid serious health problems.

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