

Initial Report

“Impact of particulate air pollution on respiratory health of school children”

The project entitled **“Impact Of Particulate Air Pollution On Respiratory Health Of School Children”** was funded UNEP RRC.AP. The project is being carried out by Pakistan Environmental Agency. The details of the activities are given below.

In the first two weeks a liaison was made between three institutes i.e. Pakistan Environmental Agency (Pak-EPA), Pakistan Medical Research Council and Directorate of Education Islamabad. Teams from all three organizations were finalized comprising of Environmentalists (Pak-EPA), medical professionals (PMRC) and participating teachers (Directorate of Education). A meeting was held between the members of all three group in which a detailed discussion was made about the need and importance of the study. In this meeting selection of schools was also made which include two schools of lower strata (male and female) and one of upper strata. The tasks and activities of each team were defined. The distribution of budget was also finalized as per need and requirements of the project.

In the next weeks, training, finalization of questionnaire, awareness of parents about project and socioeconomic survey was done. A meeting was held on dated 19th September, 2011 in which questionnaire (which was translated from English to Urdu) was discussed as well as date of starting the field work was finalized. In order to brief the parents about the importance of the study, a parent teacher meeting was arranged on 26th September, 2011. This remained very successful as the response of participation was very high. A total of 500 questionnaires along with informed consent were distributed in all three schools in order to select 150 candidates for the study.

After a gap of two day the questioners were collected back. A total of 328 children gave informed consent (Table 1). The questionnaires were scrutinized as per inclusion and exclusion criteria of the study. The information collected from the questionnaires is summarized in table 2, 3 and 4. A total of 160 students fulfilled the inclusion criteria that were than subjected to medical examination for further screening. Finally a total of 130 students were finalized for the study. After the finalization of the participating students, Peak Flow Meters were encoded for each student and before the start of taking reading a demo was given to students. Readings of the children are taken on the daily basis for 6 weeks as per study plan. At the same time the data of daily particulate matter and other environmental factors are also collected. The results of lung function test of children will be analyzed and than will be compared with environmental factors.

Table 1:- Details of Schools:

Name of School	Total forms distributed in schools	No. of children who gave Informed Consent
Federal Govt. Girls School (Public School)	200	94
Federal Govt. Girls School (Public School)	200	176
Scola Nova (Private School)	100	58
Total	500	328

Table 2:- Information related to asthma and respiratory health:

Questions	Yes	No
Did your child ever experience asthma – like or a whistling sound in the class?	23	290
In past 12 months did your child ever experience asthma – like or whistling sound in the chest?	15	243
In last 12 months did an asthma-like or whistling sound hamper the child’s speech while breathing?	24	218
Did your child ever experience asthma or wheeze?	43	275
Did your child ever experience asthma or wheeze during exercise or playing in the last 12 months?	37	280

Table 3:- The following questions are about problems that occur when your child did not have a cold or flue:

Questions	Yes	No
Did your child ever suffer from sneezing, running nose or nasal blockade when he / she did not have a cold or flue?	118	193
In past 12 months, did your child suffer from sneezing, running nose or nasal blockage when he / she did not have a cold or flue?	108	149
In the last one year did the child have eye itching or watering along with nasal ailments?	63	193
Did the nasal problem of your child cause difficulty or hamper his / her study and play in the last year?	49	211
Did your child ever suffer from hay fever (allergic fever)?	56	265

Table 4:- Other Questions

Questions	Yes	No
Did your child ever suffer from urticaria that lasted three to six months?	36	269
Did your child ever suffer from eczema?	22	295
Do any members of your household smoke?	121	204
Do your use solid fuel (eg wood, dung, coal etc) for heating or cooking within the home?	59	264

The Schematic representation of implementation plan

Activity	Weekly distribution													
	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1. Establishment of Liaison with all the stake holders	█	█												
2. Finalization of the project Team	█	█												
3. SOP for all the team members			█	█										
4. Budget Distribution			█	█										
5. Identification of Schools	█	█												
6. Training of Team					█	█	█	█						
7. Consultation with Stakeholders for Questionnaire					█	█	█	█						
8. Finalization of Questionnaire					█	█	█	█						
9. Awareness of Parents and Children					█	█	█	█						
10. Socio-economic survey					█	█	█	█						
11. Collection of Data									█	█	█	█	█	█
12. Air Quality Monitoring									█	█	█	█	█	█

Snapshots of Filed Activities



Children were briefed about the project before taking their consent for participation. In figure A, a researcher is discussing the importance, aims and objective while in figure B, a teacher is showing the peak flow meter to the children.



Medical examination was conducted for those children who fulfilled the inclusion criteria of the study on the basis of pretested questionnaire. In figure, medical officer is taking medical examination of a child.