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Research Article

HEALTH EFFECTS OF PESTICIDES ON HUMAN LIFE

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ABSTRACT

Most pesticides are designed to harm or kill pests. Because some pests have systems similar to the human system, some pesticides also can harm or kill humans. Fortunately, humans usually can avoid harmful effects by avoiding being exposed to pesticides. Human may be harmed by pesticides in two ways: they may be poisoned or injured. Pesticide poisoning is caused by pesticides that harm internal organs or other systems inside the body. Pesticide-related injuries usually are caused by pesticides that are external irritants.\Pesticides that are chemically similar to one another cause the same type of harmful effects to humans. These effects may be mild or severe, depending on the pesticide involved and the amount of overexposure. But the pattern of illness or injury caused by each chemical group is usually the same. Some pesticide chemical families can cause both external irritation injuries and internal poisoning illnesses. Some pesticides are highly toxic to humans; only a few drops in the mouth or on the skin can cause extremely harmful effects. Other pesticides are less toxic, but too much exposure to them also will cause harmful effects.

INTRODUCTION

Pesticides are highly effective substances used in control of pests and vectors of human diseases. Their application in agriculture enabled increased crops yields and manufacturing of high quality products in order to satisfy the increasing food demands over the world. The increasing use of pesticides had caused concerns about their effects on human health and the environment. Pesticides can cause harm to humans animals or the environment because the are designed to bill or otherwise adversely affect living organisms. Anyone who use pesticides or is present when pesticides are sprayed is at risk for dangerous exposure. Pesticides include all classes of chemicals used to kill or repel insects, fungi, vegetation, and rodents. 1, 2 It is well accepted that acute poisoning cause health effects, such as seizures, rashes and gastrointestinal illness 1-4 chronic effects.

Objective

1. To study the socio-economic status of selected respondents.
2. To identify harmful effects of pesticides on human health.

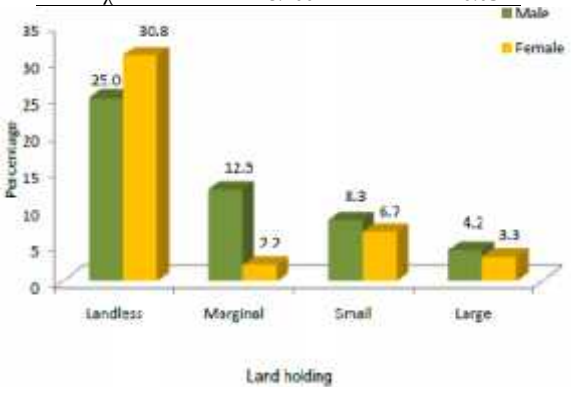
METHODOLOGY

The study was conducted in Kanpur district. Four blocks were selected out of ten block in Kanpur district. 30 villages were randomly selected from four selected block in Kanpur district. 600 sample size were selected (300 M + 300 F). Dependent and Independent variables were used such as age, education, cast, Knowledge, environmental effect, crop spray, symptom etc. The statistical tools were used such as paired 't' test, chi-square etc.

RESULT

Table 1 Distribution of respondents according to land holding

Land holding	Male	Female	Total
Landless	150 (25.0)	185 (30.8)	335 (55.8)
Marginal	75 (12.5)	55 (9.2)	130 (21.7)
Small	50 (8.3)	40 (6.7)	90 (15.0)
Large	25 (4.2)	20 (3.3)	45 (7.5)
Total	300 (50.0)	300 (50.0)	600 (100.0)
χ^2	8.400*		P < 0.05



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All farmers who work with pesticides, even without major mishaps, have a greater risk of neurological problems. A host of symptoms, ranging from headache and fatigue to memory loss and motor problems was found in most of the women landless farmers. The more pesticides the farmers used in their lives, the greater the risk – even if they hadn't used them recently. Marginal farmers' with a higher lifetime exposure to pesticides had more neurological problems – even if they never had a major accident handling the chemicals. Some of the chemicals these farmers used, like DDT, are no longer on the market, but others remain in use. However, because the concentrations of the chemicals used by large chemicals is nearly less than 4 per cent and because large farmers tend to use pesticides less often than small and marginal farmers do, it is not clear that large farmers face a significant risk.

Table 2 Knowledge of pesticides in soil contamination

Pesticide in soil contamination insecticide	Male		Female		χ^2
	Yes	No	Yes	No	
DDT	254 (42.3)	46 (7.7)	221 (36.8)	79 (13.2)	11.005**
Aldrin	193 (32.2)	107 (17.8)	90 (15.0)	210 (35.0)	70.954**
Phosphours	221 (36.8)	79 (13.2)	212 (35.3)	88 (14.7)	0.672
Phosphorus	221 (36.8)	79 (13.2)	212 (35.3)	88 (14.7)	0.672
Urea	145 (24.2)	155 (25.8)	108 (18.0)	192 (32.0)	9.356**
Nitrogen bound	192 (32.0)	108 (18.0)	165 (27.5)	135 (22.5)	5.042*
Herbicide					
Carbetamide	215 (35.8)	85 (14.2)	206 (34.3)	94 (15.7)	0.645
Dichlorprop 24-D	205 (34.2)	95 (15.8)	225 (37.5)	75 (12.5)	3.283
Bacteria					
Bacilluthurin	110 (18.3)	190 (31.7)	139 (23.2)	161 (26.8)	5.774
Genesis	95 (15.8)	205 (34.2)	86 (14.30	214 (35.7)	0.641

DDT became one of the largest used pesticides. DDT is a chlorohydrocarbon and was made for controlling mosquitoes and other insects. But, some of them developed a resistance for DDT over a lot of generations. It was used widely around the world. That was when it was used to control lice. Even though humans were in contact with the pesticide it did not harm or affect humans. Urea can be irritating to skin, eyes, and the respiratory tract. Repeated or prolonged contact with urea in fertilizer form on the skin may cause dermatitis.

Table 3 Effect of spraying on respondents' health

Symptom (spraying)	Male		Female		χ^2
	Yes	No	Yes	No	
Cough	229 (38.2)	71 (11.8)	222 (37.0)	78 (13.0)	0.437
Feeling weak	340 (40.0)	60 (10.0)	245 (40.8)	55 (9.2)	0.269
Difficulty in seeing	255 (42.5)	45 (7.5)	230 (38.3)	70 (11.7)	6.723**
Dizziness	180 (30.0)	120 (2.0)	140 (23.3)	160 (26.7)	10.714**
Abdominal pain	155 (25.8)	145 (24.2)	120 (20.0)	180 (30.0)	8.224**
Excessive sweating	112 (18.7)	188 (31.3)	134 (22.3)	166 (27.7)	3.335
Nausea	238 (39.7)	62 (10.3)	260 (43.3)	40 (6.7)	5.717*
Excessive salivation	208 (34.7)	92 (15.3)	182 (30.3)	118 (19.7)	4.952*
Diarrhoea	215 (35.8)	85 (14.2)	138 (23.0)	162 (27.0)	40.800**
Vomiting	212 (35.3)	88 (14.7)	265 (44.2)	35 (5.8)	28.726**

Health effects of pesticides can cause both acute and chronic problems. Acute health effects appear shortly after exposure to these pesticides and can include: skin and eye irritations, headaches, dizziness and nausea, weakness, difficulty breathing, mental confusion and disorientation, seizures, coma, and death. Chronic health effects may not be apparent until months or years after exposure. Such health aliments include nervous, reproductive, and immune system disorders, and cancer.

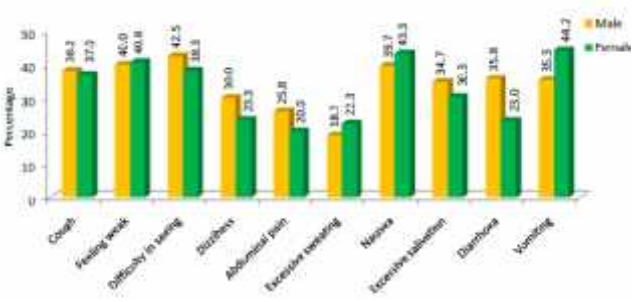
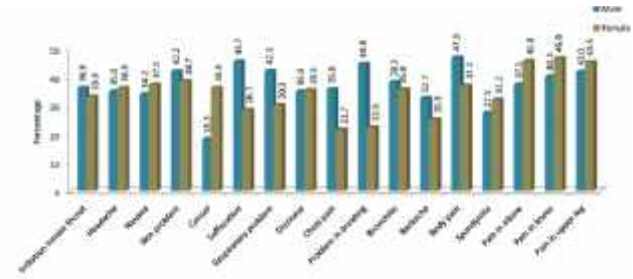


Table 4 Harmful physiological effects of pesticides on respondents

Physiological effects	Male		Female		χ^2
	Yes	No	Yes	No	
Irritation in noise, throat	218 (36.3)	82 (13.7)	200 (33.3)	100 (16.7)	2.555
Headache	210 (35.0)	90 (15.0)	218 (36.3)	82 (13.7)	0.522
Nausea	205 (34.2)	95 (15.8)	225 (37.5)	75 (12.5)	3.283
Skin problem	253 (42.2)	47 (7.8)	232 (38.7)	68 (11.3)	4.744*
Cancer	110 (18.3)	190 (31.7)	218 (36.3)	82 (13.7)	78.443**
Suffocation	262 (43.7)	38 (6.3)	172 (28.7)	128 (21.3)	67.459**
Respiratory problem	254 (42.3)	46 (7.7)	182 (30.3)	118 (19.7)	43.500**
Dizziness	210 (35.0)	90 (15.0)	153 (25.5)	147 (24.5)	22.659**
Chest pain	215 (35.8)	85 (14.2)	130 (21.7)	170 (28.3)	49.257**
Problem in breathing	269 (44.8)	31 (5.2)	135 (22.5)	165 (27.5)	136.058**
Bronchitis	230 (38.3)	70 (11.7)	215 (35.8)	85 (14.2)	1.957
Backache	196 (32.7)	104 (17.3)	152 (25.3)	148 (24.7)	13.246**
Body pain	282 (47.0)	18 (3.0)	223 (37.2)	77 (12.8)	43.535**
Spondylitis	1675 (27.5)	135 (22.5)	211 (35.2)	89 (14.8)	15.074**
Pain in elbow	225 (37.5)	75 (12.5)	275 (45.8)	25 (4.2)	30.000**
Pain in knees	242 (40.3)	58 (9.7)	281 (46.8)	19 (3.2)	22.661**
Pain in upper leg	252 *42.0)	48 (8.0)	273 (45.5)	27 (4.5)	6.720*



The type of physiological effects seen or felt (signs and symptoms) depend on the types of stress to which the body has been exposed. Because there are so many complex inter-relationships between the systems within the body, a single change in any system may result in numerous effects in other systems. In addition types of response to disease are limited, thus signs and symptoms of disease are often quite similar for different diseases. For example, headaches, fever, nausea, vomiting and diarrhea are very common non-specific symptoms of disease, produced by many different conditions. Due to the generality of most physiological responses to disease, many other methods have been developed to help diagnose the actual causes of disease.

CONCLUSION

The major health effects comprise neurotoxicity, impaired thyroid gland function, myelodysplastic syndromes (a bone marrow disorder) and plastic anemia. Pesticide use in many developing countries is much lower than that in the developing world. Yet health hazards due to pesticide exposure are high. This is due to several reasons. Firstly, many pesticides whose

use is restricted or banned in developed nations are still used in an unregulated manner in poorer nations.

Recommendation

1. Read the label before opening a pesticides container.
2. Personal safety – Follow label directions carefully. Avoid splashing, spilling, leaks, spray drift and contamination of clothing, Never eat, smoke, drink or chew while using pesticides. Provide for emergency medical care in advance as required by regulation.
3. Neem – Ancient Indians highly revered neem oil as a powerful, all-natural plant for warding off pests. In fact, neem juice is the most powerful natural pesticide on the planet, holding over 50 natural insecticides. This extremely bitter free leaf can be made in a spray form, or can be bought from a number of reputable companies.
4. To make your own neem oil spray, simply add ½ an ounce of high quality organic neem oil and ½ teaspoon of a mild organic liquid soap (1 use Dr.Bronners Peppermint) to two quarts of warm water. Stir slowly. Add to a spray bottle and use immediately.

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