Perception about the use of pesticides against household insect pests among general public of Baldia Town Karachi

Ali Javed, Seema Tahir, Tahir Anwar and Imtiaz Ahmad

ABSTRACT- Household pesticides are used commonly but very little is known about their hazards on their exposure, in the general public. In 2015 questionnaire based study was conducted in Baldia Town Karachi which revealed that with low socioeconomic background and less educated people were not aware about pesticides hazards and unsafe practices of storage and handling cause more exposure especially for children at homes. Various people complained ill health effects including breathing problem (35%), cough (33%), eye irritation (27%), allergy (26%) fever or cold (23%), running nose (17%), headache (14%), sneezing (14%), red eyes (10%) and required medical treatment. Among 201 respondents mosquito coils (73%), ant killer powder (57%), shampoo (54%), mosquito mat (44%), phenyl (44%), any spray with flit pump (32%) and mosquito cream (31%) were the pesticides used and stored in houses enhanced the exposure to humans especially children as in kitchen most pesticides (40%) are used. Because of reported ill health effects, pesticide is a serious threat to residents. So the handling and education about their use, storage and disposal of household pesticides and encouragement of safe alternatives would be effective to reduce the health risk problems in the general public.

Keywords- Health, Hazards, Percepiions, Pesiticides Risk estimation, Risk management

1 INTRODUCTION

Pesticides are the chemicals which are used to control insect pests in almost all households and in the agriculture on a large scale. Little is known about their health effects and related risks and hazards in general public. Adverse health effects are reported in many previous studies. People suffered from in home pesticide use [1], people experienced ill health effects by the use of mosquito repellents [2] and acute and chronic health risks are concerned with the use of mosquito coils [3] Agricultural insecticide exposure effected the functioning of lungs [4].

In some studies the use of pesticides may increase the risk of some diseases, associations between home pesticide use and childhood brain cancer was also reported [5]. Mosquito coil use may increase the risk of lung cancer [6]. Home pesticide use may be related with some types of childhood cancer [7].

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Increased risk of Pediatric Brain Tumor was found by the use of flea/tick pesticides in mothers [8]. As found in a study relation between pesticide use and Neuroblastoma [9]. So there is a need to investigate the awareness about pesticide use among general public about the health effects and health hazards. In Pakistan the investigation was mostly conducted in the agricultural areas, about farmer's knowledge and proper usage of pesticides in Sindh province of Pakistan [10], [11] and the risk perception among farmers about pesticide use [12] and the farmer's perception about pesticides and fertilizer use in Sindh [13] Findings showed that farmers had very little knowledge and had little awareness about pesticide hazards [14] and also from other countries as reported [15], [16], [17], but there is little work reported about household pesticides in Pakistan. Investigation on household pesticides were conducted in other countries as reported in the literature [18], [19],[20], [21], [22], [23],[24] and pesticide use was improperly done in many households mainly due to less knowledge [25].

The present study is conducted in the city area of Baldia Town, Karachi to investigate the awareness of household pesticide use and their ill health effects. The study area is located in the west part of Karachi. It is surrounded by Kimari Town, Orangi Town and Site Town from West, East and Southern side. It is further divided into eight Union Councils (Figure 1), as UC-1 (Gulshan-e-Ghazi), UC-2 (Ittehad Town), UC-3 (Islam Nagar), UC-4 (Nai Abadi), UC-5 (Saeedabad), UC-6 (Muslim Mujahid Colony), UC-7

(Muhajir Camp) and UC-8 (Rasheedabad) and contains 4 lacs of population according to district census reported west Karachi in 1998; now it is grown about 9-9.5 lacs as reported from District Town Office. Most of the people are of low socioeconomic background. Majority of them belong to labor and worker class doing jobs in the factories and companies having monthly income less than or equal to 20,000 rupees. Most of the people are of low educational status. So our purpose of study is to investigate the awareness and perception of the community about pesticides, their use and precautions taken to avoid health risk during controlling of domestic insect pests.

2 MATERIALS AND METHODS

A questionnaire was designed for survey programme about demographic characteristics, types of pest control methods used by the people, awareness of general knowledge about household pesticides, pesticide use pattern pesticide application methods, storage pattern and health hazards of pesticides [13], [24](Chitra et. al., 2013; Anwar et. al., 2015).

Interview from any one adult member of the households of these above mentioned areas of Baldia Town, Karachi was done. The participants were interviewed by going at their homes located in the described areas. The survey was conducted from September to December in 2015. The majority of the participants were males. They were of different age groups and different educational background, had different occupations and with different monthly income. Questions about their smoking habit, observed household domestic insect pests and if they had experienced any problem from pests and collected information about different pesticide products used in the households for

domestic purposes and asked for adopting any non-chemical method for treating pests. Data was collected about history of pesticide use, their knowledge and awareness about pesticides, their effects, their source of information about pesticide, their behavior and thinking about pesticides regarding their health risks. Questions were also asked about city government activity for pest control in the areas. Data was collected about their knowledge and link with agricultural activities. Information was collected about location of pesticide use, taking any precautionary measures, frequency of use and their application methods. Data was collected about storage locations of pesticides, related risks, storage time period and disposal methods. Questions were asked about adverse health effects and toxicity symptoms experienced by the participants and checked their risk perception about pesticide poisoning. If any poisoning incidence from pesticides occurred in the area and adopted remedies reported by the participants were also asked and checked, their perception on pesticides, if ever discussed with concerned authorities.

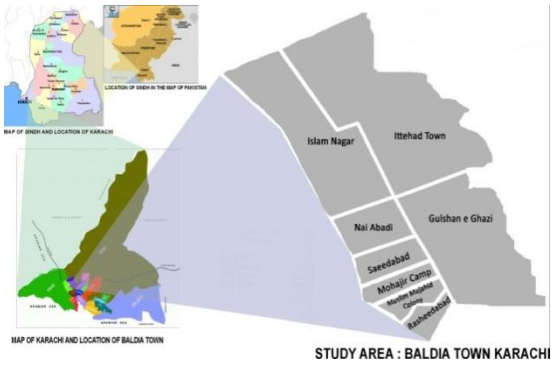

Fig.1 Map of the study area, Baldia Town Karachi.

3 RESULTS

Socioeconomic background: The reported average family members per household were 5. The age range was 15-30 years (54%), 30-45 years (30%) and 45 or above (14%). The educational background range of the participants varied from illiterate (16%), primary educated (11%), middle (12%), secondary (14%), intermediate (17%), graduate (19%) and post graduate level (10%). A large number of study participants (59%) were from worker and labor class doing jobs in the companies and factories. A large number of participants (73%) were of low monthly income. Eight percent of the participants reported problems experienced from pest organisms such as osquitoes and housefly responsible for transmitting many diseases and producing rashes and redness on skin and by keeping birds as pet and allergy from hens and malaria from mosquito and food poisonings were reported as problems in a very few cases .

3.1 Awareness about pesticides: In the present study the general public of Baldia Town has some awareness about pesticides as we found 80% people thinking that pesticides effected health. Sixtytwo percent people knew that the mosquito coil contained poisonous pesticide. Fiftysix participants knew about pesticides sprayed on a large scale on crops had health risks (Table 2). A large number of participants (51%) did not know the recommended dose of pesticides. Four percent participant's smoked during pesticide application (Table 5). Eleven percent participants reported eating or drinking during pesticide application. More than half of the participants did not know the health effects of pesticides. Almost all the study participants knew the purpose of pesticides. Fifteen percent participants thought pesticide was not harmful for human being, which showed they had no awareness about health effects of

Table 1. Awareness and knowledge about household pesticides of 201 people of Baldia Town Karachi interviewed for a research (Perception about household pesticides) in 2015.

S. No.	Questions	Respondents	Percentage
1	*What is Pesticide?*		
	It is a chemical, which kills pest and harmful animal	139	69
	It is useful chemical, which kills pest if applied as recommended doses.	32	16
	It kills insect and not harmful to human being	30	15
	It is not chemical but kills pest	9	4
2	*Pesticide can effect health?*		
	Yes	160	80
	No	41	20
3	*Thinking about pesticide products*		
	Harmful	155	77
	Harmful for children health	62	31
	Beneficial	54	27
	Harmful to environment	46	23
4	*Know about coil contains poison?*		
	Yes	124	62
	No	77	38
5	*Know about crop spray?*		
	Yes	112	56
	No	89	44
6	*Know recommended dose?*		
	Yes	99	49
	No	102	51
7	*Know application method?*		
	Yes	126	63
	No	75	37
8	*pesticide effect on birds*		
	Yes	128	64
	No	73	36
9	*pesticide effect on fishes*		
	Yes	108	54
	No	93	46
10	*pesticide effect on cows*		
	Yes	112	56
	No	89	44
11	*pesticide effect on goat*		
	Yes	111	55
	No	90	45
	Others	18	9
12	*Are Pesticides safe?*		
	Yes	106	53
	No	95	47
13	*Trust on pesticide concerned authorities?*		
	Yes	97	48
	No	104	52

pesticides. We found the thinking of the participants about pesticide use as, harmful (77%), harmful for children's health (31%), beneficial (27%) and harmful to the environment (23%). We found that advertisements (34%), friends (34%), neighbors (24%), sales points (23%) were the major sources of information Only 48% of the participants read the label instructions of manufacturers on pesticide products. The reason of not reading the label instructions was found as 16% said they tried to read but did not understand everything on the labels, 9% already knew all the informations on the label, Three percent followed the labels instruction when the product was unfamiliar, Two percent said, the labels did not provide all the informations needed (Table 2).

The most common places for buying pesticides were the local area shops reported by 72% of the participants, fiteen percent bought them from supermarkets, 12% from other places and 3% in loose packagings. The most impressive feature which was noticed when buying a pesticide was the effectiveness of the pesticides reported by 42% of participants, 16% participants considered safety as the most important feature when buying a pesticide product and 13% considered the ease of the use of pesticide product when purchasing a pesticide and 6% brought those pesticides which they used previously. Fifteen percent participants reported their concern with the agriculture. About half of the population had no information about the city government spray activities in the area for pest control. Most of the participants (77%) did not know about the chemicals sprayed in the area. From 1 time per month to 1 time in 5 years city government sprayed in the area as reported by some participants living in different locations of Baldia Town (Table 2).

3.2 Types of pest control methods: Mosquitoes (94%) was found the most common insect pests in the households, followed by houseflies (80%), ants (78%), cockroaches (71%), lizards (67%), rats (60%), bedbugs (38%), and lice (32%) (Fig 2). Mosquito coils (73%) followed by ant killer powder (57%), shampoo (54%), mosquito mat (44%), phenyl (44%), any spray with flit pump (32%), harpic (31%), mosquito cream (31%), detergent (19%), finis (17%), any drain opener (15%), rodenticide (12%), aerosol sprayer (11%), mosquito control liquid vaporizer (10%) were reported as the major household pesticides used by the participants. People used these chemicals from a long time as a part of their life. Nets on doors and windows (53%), used bed nets (34%), use or agharbatti (25%), rat traps (16%), fly swatters (3%), and other methods (2%) such as cat used for controling rats were stated as the non-chemical methods used by the participants.

Participants, were asked when they first used pesticides they reported (49%), they used pesticide when the pest problem was major, thirty five % used pesticide at first sign of pest problem, only 8% used non chemical method first, and 8% used pesticides for pest prevention. Most of the participants used pesticides in the bedrooms (82%), living rooms (47%), kitchen (40%), bathrooms (28%), outside the rooms (18%), in the lawns (7%), in the dining rooms (6%). Respondents reported about frequency of pesticide use, was almost daily (29%), one time per week (19%), 3 times per month (10%), onece per month (17%), one per year (8%). Sixtynine % of the participants stored pesticides in the home for later use, 16% gave away excess pesticide and 12% disposed of excess pesticide. 34% of the study participants stored pesticides in the store room, 30% stored pesticides in the bedroom, 11% in the bathroom and 9% in the Cupboard. The storage period of pesticides in the home was reported as 1 month by 35% of the participants, less than or equals to 6

Table 2. Responses about pesticide use of 201 people of Baldia Town Karachi interviewed for a research (Perception about household pesticides) in 2015.

S. No.	Questions	Respondents	Percentage
1	*City Govt. pest control activity in area*		
	Yes	98	49
	No	103	51
	How often		
2	*Group of chemicals*		
	Don't know	155	77
	Diesel or kerosene oil smoke	14	7
	Chlorinated	5	2
	Organophosphate	3	1
	Pyrethroid	3	1
	Other	5	2
3	*Concern with agriculture*		
	Land preparation	31	15
	Fertilizer application	24	12
	Sowing	22	11
	Pesticide application	23	11
	Animal treatment with any chemicals	11	5
	No	159	79
4	*Product features preferred when buying a pesticide*		
	Looks effective	85	42
	Looks safe	32	16
	Looks easy	26	13
	Used before	12	6
	No answer	45	22
5	*Information sources*		
	Friends	68	34
	Advertisements	68	34
	Neighbors	49	24
	Sales points	47	23
	Health inspector's	19	9
	Relatives	7	3
	Generation to generation	5	2
	Other	11	5
6	*Place of purchase*		
	Local shops	144	72
	Supermarket	31	15
	In loose packaging	7	3
	Others	24	12

months by 34% of participants (Table 4) and 77% of participants adopted precautionary measures when using pesticides in which case washing hands (69%) after pesticide use, wearing face mask (25%), use of gloves (24%), keeping children away (20%), use of a piece of cloth over mouth (11%) were reported (Fig. 3).

3.3 Storage precautions and related risks: Participants (33%) reorted the use of locks for keeping the pesticide safe, 26% stored in the child resistant containers was the adopted precautionary measures. 14% of the study participants stored pesticides less than 4 feet from the ground and 1 percent kept pesticides near food. We found the disposal method of empty containers as 55% of the participants disposed the empty pesticide containers into dustbin, 29% of participants threw it away anywhere outside the home and 16% of the participants sold it to Kabari (Table 5).

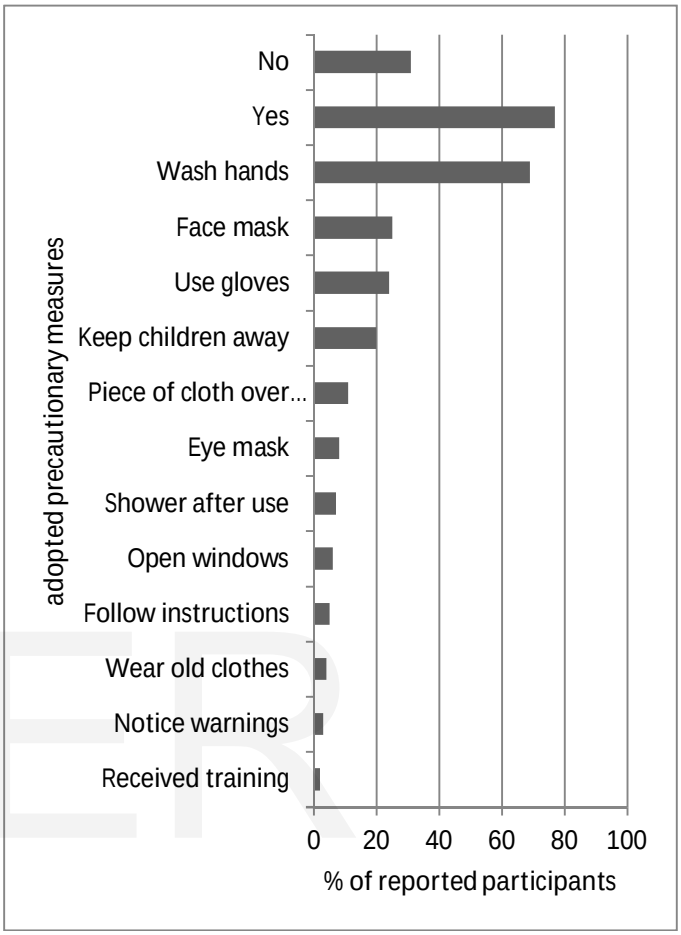

Fig. 3 Precautionary measuresadopted during household pesticide usereported by 201 people of Baldia Town Karachi interviewed for a research (Perception about household pesticides) in 2015.

3.4 Adverse health effects of pesticides: The adverse health effects were experienced by the participants due to pesticide use is breathing problems (35%), cough (33%), irritation (29%), eye irritation (27%), allergy (26%), running nose (17%), headache (14%), sneezing (14%), fever or cold (23%), red eyes (10%), vomiting (9%) were also reported (Fig. 4/9). Poisoning incidences were reported in the area by 17% of participants. In some cases suicide attempts were reported of persons by drinking pesticide or eating rodenticide and kerosene oil and pesticide was drunk by a child by mistake, a person used phenyl as shampoo, eyes were effected, a person by mistake drank acid. When we asked what they did in an incidence of poisoning, then (58%) reported that thet

approached the nearest private hospitals, 28% reported reported that they went to Government Civil Hospital, 14% first tried to cure it at home initially, 47% participants reported use of other types of remedies i,e, drinking lemon juice (27%), milk (14%), honey (7%), candy (5%), sugarcane juice (4%) and etc,

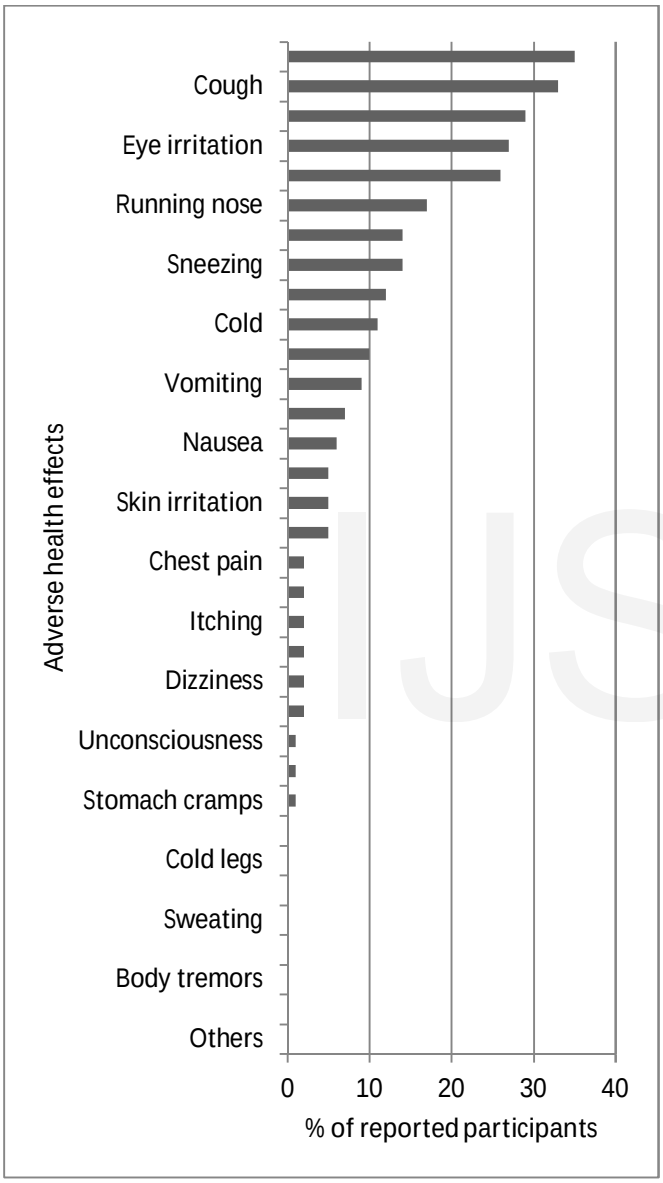

Fig.4 Adverse health effects due to household pesticide use reported by 201 people of Baldia Town Karachi interviewed for a research (Perception about household pesticides) in 2015.

4. DISCUSSION

The present study was conducted to survey about the use of household pesticides, knowledge of safe use and exposure to human specially children to these pesticides in general public.

Out of 201 participants majority of them have low education status (39%) and large number of participants (59%) were of labor class with low monthly income (73%), whereas the 19% participants were smokers and were susceptible to risks and hazards related to pesticides. They knew about the pest problems and complainted of allergy from birds and unhygienic conditions due to mosquito and housefly was also observed. Eighty % of them aware about the health risks of pesticide uses, but they commonly used the mosquito coil because of its effectiveness for a long time. 73% used mosquito coil, 44% mosquito mat, 31% mosquito cream and other mosquito control measures were used as major household pesticides from a long time with health problems like cough, breathing problems as reported earlier, using repellants, complained ill health effects [2] whereas skin rash, itching reported when using mosquito cream, similarly in the present surveye the public used the repellents suffered from many ill health problems like in their breathing, irritation in eyes and suffocation. As the pyrethrums are used in these formulations and that caused sneezing and prolonged used causing liver damage, aesthma and corneal damage. (So the alternate methods of control are safe nets, neem oil, neem cream, mustard oil). The respondents (5%) in the present study never knew about the recommended dosages as the non-occupational pesticides dealer had least priority about the health risk and the recommended doses of the chemicals actually benefited to get rid of pests and exceeded doses caused the expected risk to human health [26].

Participants (10%) reported the poisoning incidences from the pesticides and they experienced the adverse health effects, mostly (77%) adopted the precautionary measures as washing hands (69%), open windows (6%) after application, took shower (7%), used mask (25%) following [21] whereas, surveyed in the field and observed that they did not take any precautionary measures and were facing health problems [13].

Table 3 Characteristics about the use and storage of household pesticides of 201 people of Baldia Town Karachi interviewed for a research (Perception about household pesticides) in 2015.

S. No.	Questions	Respondents	Percentage
1	*Stage of pesticide use*		
	When the problem is big	98	49
	At first sign of problem	70	35
	Preventatively	16	8
	Use non chemical method first	17	8
2	*Frequency of pesticide use*		
	Daily	59	29
	3/week	6	3
	2/week	11	5
	1/week	39	19
	3/month	21	10
	2/month	12	6
	1/month	34	17
	2/year	3	1
	1/year	16	8
	Other	2	1
3	*Place of pesticide use*		
	Bedroom/sleeping area	164	82
	Living room/living area	94	47
	Kitchen/cooking area	80	40
	Bathroom	56	28
	Outside	36	18
	Garden/lawn	14	7
	Dining room	12	6
	Garage	2	1
	Utility room	2	1
4	*pesticide use history*		
	More than 10 years	94	47
	1-5 years	58	29
	6-10 years	47	23
5	*Mix pesticides*		
	Yes	70	35
	No	131	65
6	*Excess pesticide*		
	Store for later use	138	69
	Give excess away	33	16
	Dispose of excess	25	12
7	*Storage locations of pesticide*		
	Store room	68	34
	Bedroom/sleeping area	27	13
	Bathroom	22	11
	Cupboard	19	9
	Inside home	11	5
	Utility room	10	5
	Outside home	6	3
	Garage	5	2
	Basement	2	1
	Closet	2	1
	Other	19	9
	Not stored	31	15
8	*Time period of pesticide storage*		
	1month	70	35
	<6 month	69	34
	12-24month	10	5
	More than24 month	14	7
	Never store	34	17

Whereas the symptoms observed in the present study like breathing (35%), cough (33%), irritation (29%) and others are common, similarly [2] reported acute toxicity symptoms that showed the behavioral differences of the people as more common users of pesticides showed less protective behavior [1]. Farmers during application of pesticides in field ate (35%), drank water (44%) and smoked (42%) [13], in the present study (4%); it was observed that smoking was not rare during pesticide use, whereas (53%) thought that pesticides were safe which showed more than half did not know about the health effects of pesticides.

It was observed that mosquito (94%) was thought to be a common pests followed by housefly (80%), ants (78%), cockroaches (71%) and others. Coils (73%), mat (44%), cream (31%) and aerosols (11%) for controlling mosquitoes were generally followed. It isreported the use of coil (75%), mat (1%), cream (1%) and chalk (10%) for controlling mosquito [24] whereas, insecticide chalk is toxic and found in 7% houses [20]. The use of chalk stick and stored at home is a serious problem because the product in this form enhances the exposure of children to the chemical as they often played with chalk which increased risk taken in handling.

Table 4: Risks and hazards, adverse health effects and poisoning incidences due to household pesticide use reported by 201 people of Baldia Town Karachi interviewed for a research (Perception about household pesticides) in 2015.

S. No.	Questions	Respondents	Percentage
1	*Read product label*		
	Yes	103	51
	No	105	52
2	*Reason of not reading label instructions*		
	Try to read but do not understand everything	33	16
	Never read the product label information	23	11
	Already know all the information on the label	18	9
	Always follow the label exactly	8	4
	Follow the label when the product is unfamiliar	6	3
	Does not provide all the information i need	5	2
3	*Smoke during spray*		
	No	193	96
	Yes	8	4
4	*Eat/drink during spray*		
	No	179	89
	Yes	22	11
5	*Storage precautions and related risks*		
	Pesticide locked away	67	33
	Child resistant container	52	26
	Stored less than 4 feet from the ground	29	14
	Kept near food	3	1
	Kept near dishes/cookware	0	0
6	*Disposal of empty pesticide containers*		
	Into dustbins	111	55
	Throw away	59	29
	Sale to Kabari	32	16
	Burned	8	4
	Reuse the container	6	3
	Buried	6	3
	Others	2	1
7	*Poisoning incident in the area*		
	No	164	82
	Yes	20	10
8	*incidence of poisoning*		
	Private hospital	116	58
	Civil hospital	56	28
	Cure at home	28	14
9	*Poisoning Remedies*		
	Lemon juice	54	27
	Milk	29	14
	Honey	15	7
	Candy	11	5
	Sugarcane	8	4
	Others	95	47

In the present study 15% thought that pesticides are not harmful for human beings so they did not have awareness about their effects on health. About half of respondents were not aware about the City Government spray programme and half did not have any knowledge of spray. The information sources are mainly advertisement (34%), from friends (34%), neighbors (24%) and others; whereas 48% read the label instructions as reported in the previous reports, for farmers, neighbors (11%) and others (11%) as per information sources of [13]and it was was reported that neighbors (10%) and others are the information sources, and half of respondents (42.5%) did not understand the instructions as noted in the present survey 48% could not understand label instructions. Fortynine percent used pesticides when pests are massive but some 8% used routinely the pesticides in home for prevention of general pests [21]. In the present survey 72% of the people bought products from the local shops and 42% of them preferred effectiveness while 16% preferred the safety to humans when purchasing the products. The safety is the most important criteria when choosing the home pesticide product followed by its effectiveness as noted

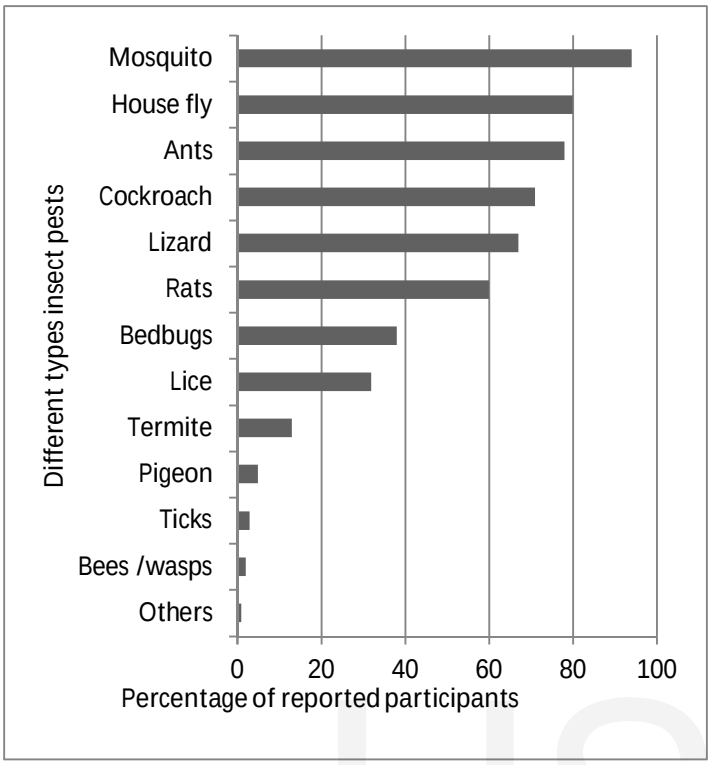

Figure 2: Domestic insect pests reported by 201 people of Baldia Town Karachi interviewed for a research (Perception about household pesticides) in 2015.

in the present study only 8% used non chemical methods, whereas in the earlier studies 32% used non chemical methods [21],[22].

In the present study respondents used products in bedrooms (82%), living rooms (47%), kitchen (40%) and bathrooms (28%) respectively. Similarly respondents of the present survey used products in kitchen (70%), outside (60%) and bathroom (55%) as also reported and 70% of the pesticides were stored inside the home often in the kitchen [20]. Similarly in the present study 69% stored pesticides in their home for later use and pesticides are not properly stored, some stored it in store room (34%), in bedrooms (30%) and they stored it for 1 month (35%) or 6 months (34%) or did not store at home (17%), as they locked the products (33%) or stored in the child resistant container (26%), some (14%) stored pesticides less than 4 feet from the ground and 1% kept pesticides near food. The respondents disposed off or used pesticides bottles carelessly, as they threw it in dustbin (55%), outside the home (29%). So the storage and disposal of container are also important factors for causing hazards. As in the present study 40% did not care in storage specially children could open and expose the unlocked cupboards [20]. Similarly [13]Anwar et. al., (2015), discussed the improper storage of pesticides as farmers dumped and burnt the empty bottles (39%) or disposed containers in dustbin (95.4%) [21] or 90% products were disposed off by throwing it away [20].

In the present study (77%) adopted precautionary measures when using pesticides, washed their hands (69%), put face mask (25%), wore gloves (24%), whereas, farmers (18%) did not wash their hands after pesticide application [13] as per [21], (97%) washing hands and using gloves, (27%) following instructions as the common behavior and risk perception.The frequent use of pesticides with no precautions taken and without understanding ill effects could reduce the ability to generally realise about its hazards and risks to health [27]. People only rely on product labels and unfortunately instructions are not followed properly and it is important to user behavior and risk assessment [20]. It was reported that use of pesticides in home and garden left adverse health effects especially on children [29].

Farmers (85%) Knew that pesticides caused ill effects on health [13] and complained of dizziness, headaches, tiresome [30]. As in the present study 35% had the breathing problem, cough 33% and other problems (32%). The pesticide exposure to humans can be monitored by measuring the residues level in soil, water and food [31], [32], [33].

As the people mostly based on label instructions which sometimes were not followed completely [20] and the people used these toxic products and the protective measures were not taken the health risk continued whether they were aware or unaware of these risks [34]. As in the present study breathing (35%), cough (33%), irritation (29%), eye irritation (27%), allergy (26%) and others are due to the use of repellants mostly against mosquito control in form of Coil 73%, mat 44%, sprays 11% as these repellants are synthetic Pyrethroids and on heating and burning of coil, mats, compounds embedded in it vaporized and repelled mosquitoes and results indicated the toxicity to users sooner or later after use followed by above symptoms, as breathing problems were most common with headache and eyes irritation. [2] confirmed the results of the present study where the mosquito repellants were most commonly used followed by symptoms in breathing problems (35%), eye irritation (27%) and headache (14%). Alternative measures could be adopted community and the local bodies. The use of household pesticides is common with unsafe practices. So by improving the awareness of their use, handling of pesticides and adverse effect on health in the community (General public) on the proper and safe use of chemical household pesticides must compel the user with chemical

methods of pest control. The adverse health effects, thus related with the use of repellants could be reduced.

5. CONCLUSIONS

In the present study people of low socioeconomic background were found in the Baldia Town, as majority of them were from labor and workers class and maximum number of people were of low educational status. The pest problems were found high, so the use of household pesticides was common. The knowledge of general public about pesticide was of low standard because people did not adopt sufficient precautions and unsafe practices while handling them were common; that's why adverse health effects and poisoning incidences were reported in the area. A wide range of pesticides therefore were used by the general public of Baldia Town, Karachi. A considerable number of people also used non chemical methods. Nearly half of the individuals did not read the label instructions. People adopted precautionary measures during pesticide application to some extent. Only one third of the participants adopted precautions during storing pesticides. A considerable number of participants (14%) stored pesticides easily available to children. We found a large number of participants who did not carefully disposed the empty containers which were also included in the recycling of plastic materials, the related hazards depended on what type of products were prepared from them which required investigation. A wide range of acute toxicity symptoms found reflected carelessness in the behavior while handling pesticides. Poisoning incidences were also reported from the area due to careless behavior in pesticide storage which needs attention. By the present study we concluded that the general public should be exposed to health risk for their wreckless use in proper storage and related risks and hazards of pesticides. The product labels should be brief and informative and should contain pictograms for uneducated persons so that they could also prevent themselves from the harmful effects of pesticides. Antidote information should be present on the product labels. Pesticides are effective but not safe so research is needed for the development of new ideas of safer and alternative of pesticides or repellants especially for mosquitoes, further the users of household pesticides be educated about the hazards on health, safe practices and alternative control measures that could develop the effective education and poison prevention programme in the community.

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