



Evaluation of Entomophobia Levels among Students of Plant Protection: The Case Study

Jafar Ebrahimifar*, Asghar Babamir-Satehi and Zohreh Farhadi

Department of Plant Protection, Faculty of Agriculture, Shahid Chamran University of Ahvaz, Ahvaz, Iran

*Corresponding Author: Jafar Ebrahimifar, Department of Plant Protection, Faculty of Agriculture, Shahid Chamran University of Ahvaz, Ahvaz, Iran.

Received: November 21, 2018; Published: May 22, 2019

DOI: 10.31080/ASAG.2019.03.0492

Abstract

Insects are very important in terms of ecological roles, biodiversity, and influence on humankind health, agriculture and natural resources. However, they affect the health of humans changed mental and psychic states of them that result in entomophobia. In current study, we evaluated of entomophobia among students of plant protection, as an important group who are contact with insects in different procedures, using by a standardized questionnaire. The results showed that entomophobia had psychological origin and had not to do with their knowledge and attitude. Moreover, the factors of gender, passing of entomology course, interest and having previous experience with entomophobia were positive correlation with entomophobia. Whereas, variables of responders' age, their birth place, occupation of their parents and their place of residence had no statistical significant correlation with the entomophobia. So, recommended that lecturers of entomology at the university should purposefully increase knowledge and consciousness of students by providing comprehensive and more courses on entomology, thereby will decrease their entomophobia levels.

Keywords: Fear of Insect; Responders' Answer; Phobia; Entomology Course; Iran

Introduction

The insects are one of the major classes of organism into the phylum Arthropoda on earth today [1]. They are nearly depended on our survival and have important effects such as; influence on agriculture (as pests and natural enemies), humanity health (as diseases vector), ecological roles (as decomposer) and natural resources [2]. Many insects are beneficial that produce honey, wax, silk and some of them play role as pollinators. On the other hand, some of insects are series pests of agricultural products and pathogens vector [1]. There is a relationship between food chain of humankind and insects so they are eaten as a delicious food in many areas in the world particularly in tropics [3]. Thus, entomophagy regime is as a global perspective in future so that highest consumption by humans belongs to three orders; hymenopterans, coleopterans and lepidopterans [4]. Nutrition of insects includes; herbivorous [5], parasitism and predatism [6] xylophagous and mycophagy [7] which has doubled their importance. Furthermore, insect pollinate about 85 % of angiosperm plants [8]. Moreover, the insects transmit parasitic agents and effect on health of hu-

mans then changed mental and psychic states that result in entomophobia [9]. Entomophobia, the irrational or abnormal fear of insects and mites, is recognized as an eminent public health problem through small size, insect shape, being of spine and spore on their bodies, diversity of color and bad odors [10]. Generally, entomophobia is found in two groups; the first, when a person is enhanced by a specific idea is true entomophobia whereas the second is false entomophobia came when a person was exposed to insects abruptly [10,11]. Entomophobia especially in plant protection students is more important because these students are an important group who scrimmage and involve with insects. In addition, they work with them in various ways during their studies and eventually must overcome their fears. Therefore, in this research we evaluated of entomophobia among students of plant protection field (consist of B.Sc, M.Sc and PhD students). It is more important to comprehend and decrease those factors affecting on phenomenon of insects fear.

Materials and Methods

The research was a quantitative study that carried out by plant protection students. The subject populations were undergradu-

ate (B.Sc.), postgraduate (M.Sc., Entomology plus Plant Pathology) and Ph.D students who were studying in the Department of Plant Protection, Faculty of Agriculture, Shahid Chamran University of Ahvaz, Iran. A number of responders' were 51 B.Sc., 26 M.Sc. consisting of entomology and plant pathology students and 15 Ph.D students of entomology. Required data were gathered using by a standardized questionnaire that provided by a team of experts for validation. The Cronbach's α coefficient was around 0.81. Statistical analyses of data were conducted by SPSS vr. 23. Likewise, relationship between responders' gender and their entomophobia; having previous experience of working with insects and entomophobia were evaluated by T-test analysis. Moreover, to incidence of entomophobia in responders that passed or failed the entomology course, ANOVA analysis was utilized. Also, other variables such as interest of students to entomology field, age of them, their birth places, and occupation of their parents and places residence of them were assessed.

Results and Discussion

In current research, responders' abundance was 40.64 and 59.34 % for male and female that 54.04, 27.48 and 16.48 % were B.Sc, M.Sc and Ph.D students, respectively (Figure 1). Among the responders, 16.30 % students specified very low level of entomophobia and 27.17 % of them were low level; 30.43 % of them showed moderate level while only 19.5 % students declared a high level of entomophobia and 6.52 % a very high (Figure 2). In previous studies that been carried out at Shiraz University, Shiraz, Iran [9], 44.7 % of responders had high and very high level of entomophobia whereas studies of Firoozfar, *et al.* [10] at University of medical Science (Tehran, Iran) revealed that 82.3 % students had problem when they are in contact to insects.

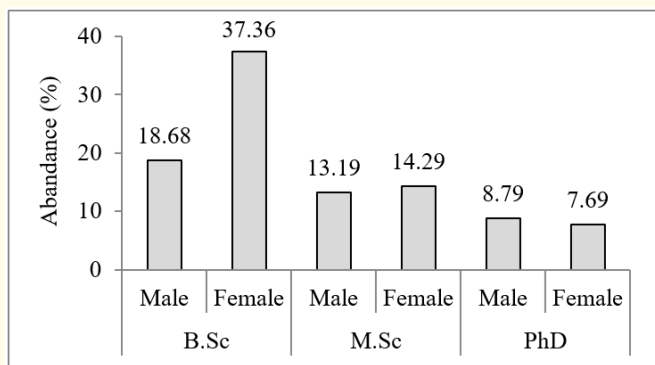


Figure 1: Abundance of responders based on their educational level.

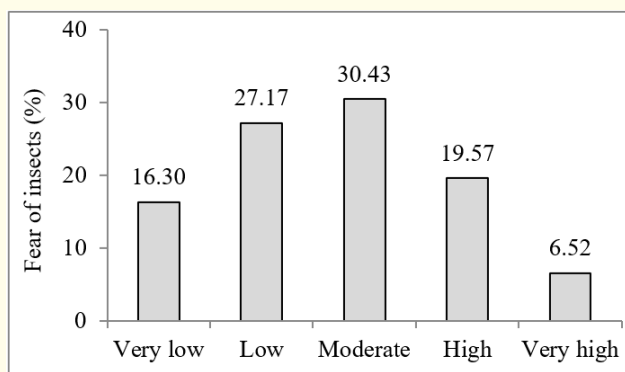


Figure 2: Entomophobia levels among responders.

To determine the relationship between students' gender and their entomophobia, a T-test analysis showed that females' score (75.89) than males' score (42.22) had statistical significant difference (Table 1). Moreover, all of respondents were believed that insects have economic value. About 41.32 % of responders declared that insects are destructive and damaging to humankind while 56.68 % of them didn't this belief. Therefore, their entomophobia maybe is more a psychological origin until their knowledge and attitude about damaging of insects to humankind. In term the number of species and abundance, the insects are highly successful organisms [12]. Thus, in most of places are found insects and we will deal with them. Overall, agricultural students, particularly students of plant protection, are a group of people who mostly exposed to insects. Also, some of their studies maybe are conducted on the insects. Hence, we expected that they in comparison with other people less afraid. But, the findings of current research were revealed that fear of insects (entomophobia) is an ordinary phenomenon among of them.

Gender	Mean	SE	T	P
Male	42.22	15.42	2.47	0.042
Female	75.89	24.33		

Table 1: Relationship between students' gender and their entomophobia.

In assessment of entomophobia levels among four major orders of insect (Hymenoptera, Coleoptera, Diptera and Lepidoptera), the students declared that highest their entomophobia are associated to hymenopterans order (50.52 %). Their entomophobia rate to the coleopterans and dipterans were 35.28 and 16.13 %, respectively. Furthermore, the lowest entomophobia of them (1.07 %) related to lepidopteron order. Most of them expressed reasons of their fear

as having previous experience of wasp/bee sting or having allergy to their stings and creating anaphylactic shock by them. A similar study showed that entomophobia levels responders in orders of beetles, bees, dragonflies and butterflies was 79, 61, 60 and 87.1 %, respectively [9].

The interest rate of students in entomology was evaluated. The result shows that 11.83% of them had no interest to this field while 19.35% and 32.26% of them had low and moderate interest. Only 20.43% and 15.05% of students expressed that had high and very high of interest levels.

In current research, we assumed that if responders have previous experience of working with insects, it possible impressed their entomophobia. The results of T-test analyses revealed that about 92 % of responders had previous experience with insects but less than 75 % of them lower entomophobia in comparison to those who hadn't previous experience with insects. Therefore, having a previous experience with insect can be reducing entomophobia rate however some of psychological factors influence the rate fear on insects.

Overall, when students pass an entomology course at the university, expected that their fears are reduced because most of people entomophobia are subconscious. The ANOVA test between entomophobia of responders and status of their entomology course shows that students who passed this course had significantly lower level of entomophobia than other students that did not pass it (Table 2). Likewise, variables such as responders' age, their birth place (city o village), occupation of their parents and their place of residence were evaluated and had no statistical significant correlation with the entomophobia.

Variable	Passed entomology course	Mean	F	P
Entomophobia	Yes	68.48	3.92	0.012
	No	15.22		
	Current term	16.30		

Table 2: ANOVA of respondents' entomophobia with status of their entomology course (passed or not passed).

Plant protection students should change their perceptions and attitudes about the insects. Because, in the future they may become teachers, experts of entomology or even be contact with farmers. Accordingly, they perhaps transfer their entomophobia to the students or customers/clienteles that lead to harassment of them. It appear that some of those students don't familiar the roles of in-

sects in nature and society, such as pollination, produce of honey, silk and wax [2], as natural enemies against insect pests, having ecological roles [1] and as a diet in food chain of human [4]. For instance, globally about 31% of insects that consume are beetles and the second rank of consumption is related to caterpillars [3].

Conclusion

So, recommended that lecturers of entomology at the university should purposefully increase knowledge and consciousness of students by providing comprehensive and more courses on entomology, thereby will decrease their entomophobia levels.

Acknowledgements

The authors thank to Eng. Mohammad Azimi for helping and providing this research. We thank to an anonymous reviewer for her/him valuable comments on an earlier version of the manuscript

Bibliography

1. Borrer DJ and Delong DM. "An introduction to the study of insects". In: An introduction to the study of insects (1971): 812.
2. Scudder GG. "The importance of insects". *Insect Biodiversity: Science and Society* 1 (2009): 7-32.
3. Van Huis A. "Insects as food in sub-Saharan Africa". *International Journal of Tropical Insect Science* 23.3 (2003): 163-185.
4. Glover D and Sexton A. "Edible insects and the future of food: a foresight scenario exercise on entomophagy and global food security". *IDS* (2015).
5. Bernays EA. "Evolution of feeding behavior in insect herbivores". *Bioscience* 48.1 (1998): 35-44.
6. Symondson W, et al. "Can generalist predators be effective biocontrol agents?" *Annual Review of Entomology* 47 (2002): 561-594.
7. Villani MG and Wright RJ. "Environmental influences on soil macroarthropod behavior in agricultural systems". *Annual Review of Entomology* 35 (1990): 249-269.
8. Grimaldi D, et al. "Evolution of the Insects". Cambridge University Press (2005).
9. Hayati D and Minaei K. "Investigation of entomophobia among agricultural students: the case of Shiraz University, Iran". *Journal of Entomological and Acarological Research* 47 (2015): 43-45.

10. Firoozfar F, *et al.* "Knowledge, attitudes and practices study in relation to entomophobia and its application in vector-borne-diseases". *Asian Pacific Journal of Tropical Biomedicine* 2.2 (2012): S1135-S1137.
11. Galeota W. "Entomophobia and what it means to a PCO. Pest". *Control* (1966): 17-18.
12. Samways MJ. "Insect extinctions and insect survival". *Conservation Biology* 20.1 (2006): 245-246.

Volume 3 Issue 6 June 2019

© All rights are reserved by Jafar Ebrahimifar., *et al.*