

Factors Influencing the Fear of Hypodermic Needles Among Young Adults in Bulacan

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ABSTRACT:

Context: Fear of needles is one of the prevalent distressing aspects for patients in healthcare settings. According to research, fear of needles can significantly restrict a person's professional and social functioning and is highly prevalent in the general population. **Aim:** This study's primary objective is to determine the factors influencing the fear of hypodermic needles among young adults in Bulacan. **Materials and Methods:** This study was carried out with the help of a survey tool in which items were scored based on a 5-point Likert scale ranging from very true of me to untrue of me. The study included 384 young adults residing in Bulacan, and the observation was recorded and analyzed. **Results:** The results revealed that hypodermic needle fear has a prevalence of 34% among young adults. Furthermore, in terms of gender, hypodermic needle fear has a higher prevalence in females than males. Also, hypodermic needle fear has a prevalence of 41% in District 3 of Bulacan. Moreover, it was found out that seeing the needles penetrating someone's skin, amateur medical staff, not easily accessible veins are the factors influencing the hypodermic needle fear among the young adults in Bulacan.

Keywords- Fear of Hypodermic Needles, Medical Avoidance, Factors, Prevalence

INTRODUCTION

Hypodermic needles and injections have a very significant role in the treatment of patients. Statistics show that about 12 billion injections and 100 million vaccines are given daily to children worldwide. (Milovanović et al., 2017).

Furthermore, syringes and hypodermic needles are medical devices used in blood tests that withdraw blood from the body. They help doctors check for specific diseases and conditions. These devices also help check the function of the people's organs and show how well treatments are working. However, this only shows how necessary it is to understand the fear of hypodermic needles, and it may be a barrier to the availability of appropriate medical treatment.

Trypanophobia, commonly known as fear of needles, is an intense injection fear or hypodermic needles frequently involved in medical procedures. However, the usage of injections and hypodermic needles is ubiquitous in clinical settings, yet the fear of hypodermic needles

may avoid preventive measures and treatment.

Fear of hypodermic needles, blood, and injury is seen as a particular entity and is an anxiety condition. Researches indicated that fear of hypodermic needles, blood, and accidents would dramatically affect an individual's professional and social functioning. (Milovanović et al., 2017).

Statistics also established that fear of hypodermic needles is normal in healthcare settings, and about 10% of patients experience extreme needle fear, resulting in severe prevention, discomfort, and disability. (Ali et al., 2015). In certain people, this fear can be intense enough to disclose a diagnosis of a particular form of phobia, blood-injection-injury (BII), referred to as "needle phobia". This study's primary objective is to determine the factors influencing the fear of hypodermic needles of young adults (20-24 years old) residing in Bulacan.

MATERIALS AND METHOD

This research is a quantitative descriptive design that determines the associations between variables in a chosen sample with the help of numerical data.

According to the Philippines Statistics Authority, the total population of young adults (20-24 years old) is 312,643 as of 2015. The sample size was computed using the sample size formula and revealed that 384 respondents are needed to participate in this study, and was divided equally among males and females (192 males and 192 females). The purposive sampling technique with inclusion criteria was used to select participants for the study.

The survey questionnaire ascertaining the factors that influence the hypodermic needle fear among young adults was formulated based on the survey questionnaire in the study of Milgrom et al., 1997 and Milovanović et al., 2017. The survey tool was then validated and tested its reliability ($\alpha = 0.92$).

STATISTICAL ANALYSIS

The collected data from the respondents were recorded, counted, statistically analyzed, and interpreted using descriptive and inferential statistics.

Cronbach alpha was used to assess the reliability and the consistency of the survey tool. Descriptive statistics such as mean, standard deviation, frequency, and percentages were used to determine the factors influencing the needle fear of the respondents.

T-test was used to evaluate the significant difference between the sex and the districts of young adults from the factors presented. Lastly, f-test for establishing the significant differences among the four Districts of Bulacan in terms of the three factors presented.

RESULTS AND DISCUSSION

Out of the 384 young adults, 130 or 34% responded that they have fear. Meanwhile, 66% of the respondents do not have fear, with a frequency of 254. All in all, hypodermic needle fear has a prevalence of 34% among young adults in Bulacan.

In terms of the percentage of needle fear

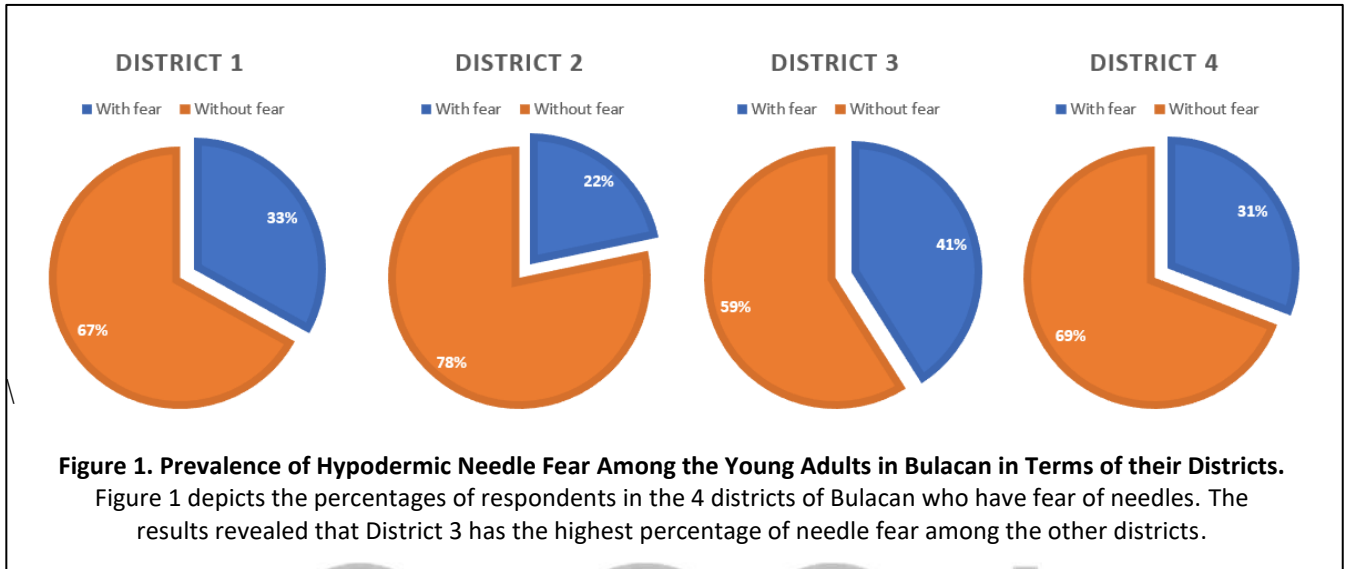
in sex, 32% of male respondents indicated that they have fear with a frequency of 61. Furthermore, a total of 131 respondents do not have hypodermic needle fear, with a percentage of 68%. Concurrently, out of 192 female young adults, 69 of them stated that they have hypodermic needle fear, with a percentage of 36%. Overall, the percentage of needle fear is higher in females than in males, with a percentage of 36% and 32%, respectively.

In the context of the four districts of Bulacan, District 3 obtained the highest percentage (41%) of needle fear out of 70 respondents. Meanwhile, out of the 124 respondents of District 1 and the 111 respondents from District 4, 33% stated that they have hypodermic needle fear. In contrast, the lowest percentage of 29% was obtained in the second district.

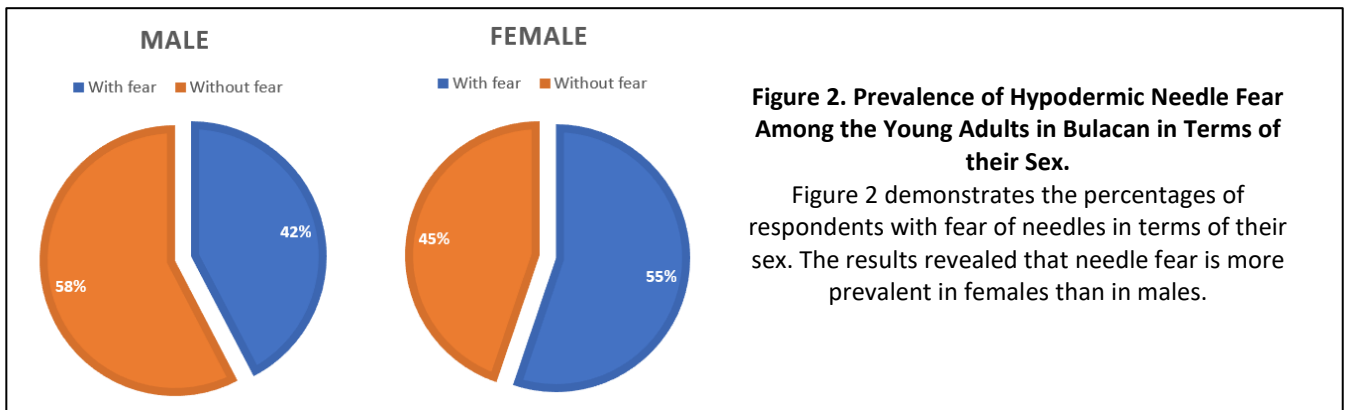
In terms of the factors of hypodermic needles, the items, *amateur medical staff*, *seeing the needles/injections penetrating someone's skin*, and *not easily accessible veins* obtained the highest mean rating. Therefore, these items are considered factors that influence the fear of hypodermic needles of young adults in Bulacan.

The statistical tool, t-test revealed that there is a significant difference between the male and female respondents. This indicates that more female young adults can relate to the physical factors that include the following statements: *veins that are not accessible*, *arms tensing*, *being a sensitive person*, *sweating arms and armpits*, and *having a low pain tolerance*.

On the other side, the f-test revealed significant differences among the young adults and their districts in terms of psychological factors. This also revealed that district 3 attained the highest mean score, entailing that most of the respondents from the 3rd can relate to the statements under the Psychological factors, which are; *trauma from painful vaccination*, *low pain threshold*, *feeling nauseous and sick after the procedure*, *scared of amateur medical staff*, and *getting anxious just the thought of pain*.



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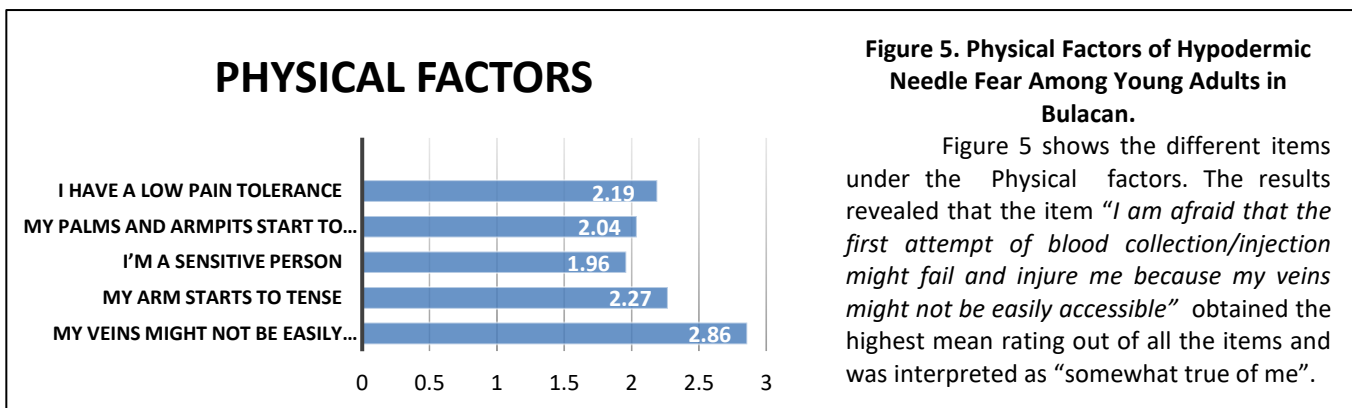
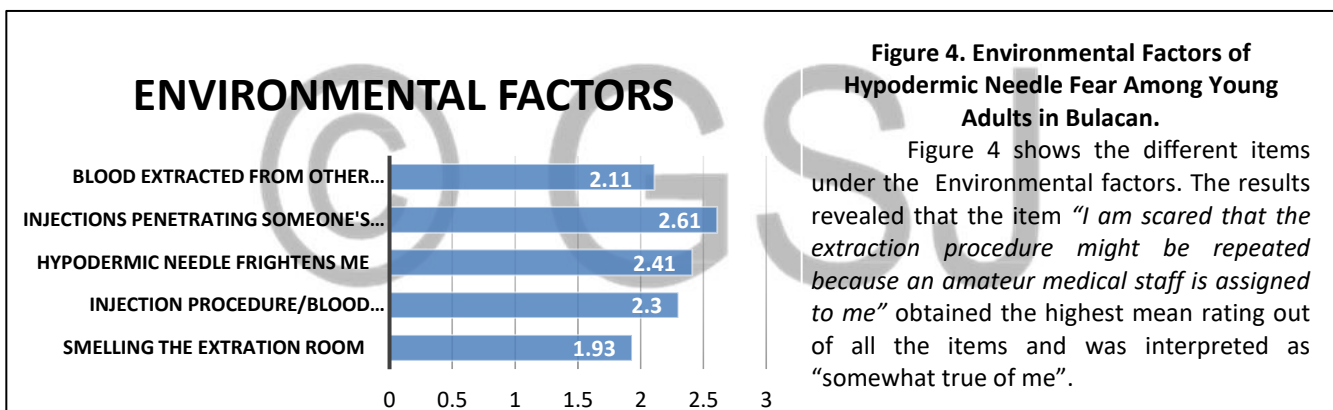
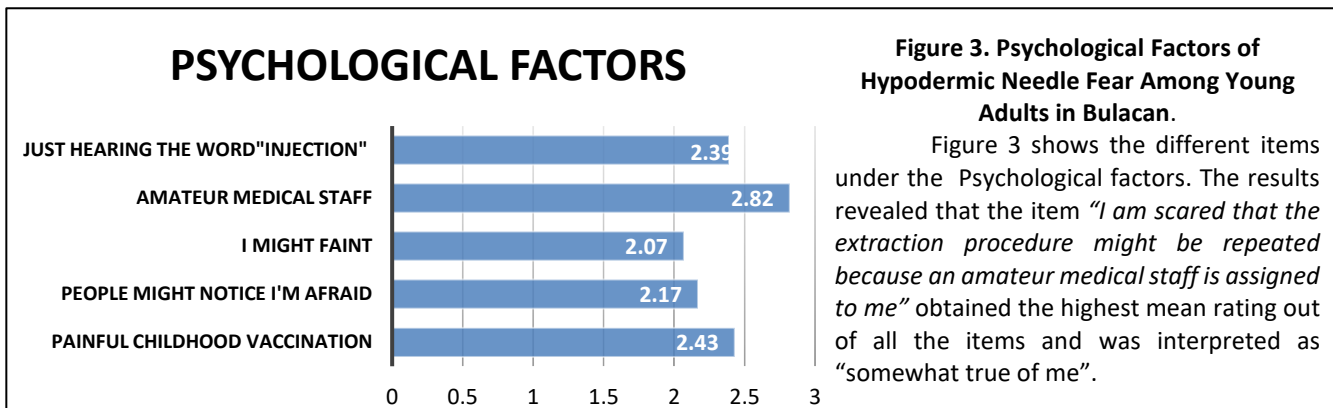


Table 1. Significant Difference Between the Male and the Female Young Adults in Terms of the Three Factors

	<i>Sex</i>	<i>Mean</i>	<i>SD</i>	<i>t-value</i>	<i>p-value</i>	<i>Sig</i>
Psychological	Female	2.454	1.0734	1.442	p = 0.150 > 0.05	NS
	Male	2.301	1.0060			
Environmental	Female	2.379	1.2068	1.811	p = 0.071 > 0.05	NS
	Male	2.172	1.0291			
Physical	Female	2.385	1.1298	2.228	p = 0.026 < 0.05	S
	Male	2.142	1.0109			

Table 1 demonstrates the t-test result of the significant difference between the male and female young adults in terms of the three factors. It is revealed that the Physical factors obtained $t=2.228$ with $p\text{-value} < 0.05$, which implies a significant difference between the male and female respondents in terms of the Physical factors.

Table 2. Significant Differences Among the Districts of Young Adults in Terms of the Three Factors

		<i>Mean</i>	<i>S.D.</i>	<i>f-value</i>	<i>p-value</i>	<i>Sig</i>
Psychological	D1	2.461	1.0073	3.206	p = 0.023 < 0.05	S
	D2	2.261	0.9789			
	D3	2.650	1.1162			
	D4	2.205	1.0495			
	Total	2.379	1.0430			
Environmental	D1	2.321	1.1487	1.723	p = 0.162 > 0.05	NS
	D2	2.195	0.9232			
	D3	2.521	1.2607			
	D4	2.153	1.1281			
	Total	2.282	1.1245			
Physical	D1	2.373	1.0636	2.427	p = 0.065 > 0.05	NS
	D2	2.122	0.9421			
	D3	2.479	1.1916			
	D4	2.124	1.0938			
	Total	2.268	1.0789			

Table 2 demonstrates the f-test result of the significant differences among the four districts of Bulacan in terms of the three factors. The findings revealed that the Psychological obtained $f=3.206$ with $p\text{-value} < 0.05$, which implies significant differences among the four districts of Bulacan in the Psychological Factors.

CONCLUSION

Based on the foregoing conclusion was drawn. The statement, "*I am scared that the extraction procedure might be repeated because an amateur medical staff is assigned to me*" appears to be somewhat true of them among the psychological factors. While in the environmental factor, "*Whenever I see needles/injections penetrating through someone's skin, I can feel their pain*" was also proven that it is somewhat true of the participants. Lastly, the "*I am afraid that the first attempt of blood collection/injection might fail and injure me because my veins might not be easily accessible*" from the physical factors demonstrated how the participants were influenced physically that indicates that this statement is somewhat true of them during the procedure. Therefore,

amateur medical staff, seeing the needles penetrating someone's skin, and not easily accessible veins are the factors influencing the fear of hypodermic needles among young adults in Bulacan.

CONFLICT OF INTEREST

The authors declare no conflict of interest.

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REFERENCES:

1. Ali, F., Bai, P., Dungrani, H., Raju, M., Ustad, F., & Hassan, I. (2015). *Nature and prevalence of needle phobia among dental college patients*. Journal of Dental Research and Review, 2(3), 130. <https://doi.org/10.4103/2348-2915.169826>
2. Borda Mas, M., López Jiménez, A. M., & Pérez San Gregorio, M. Á. (2010). *Blood-injection phobia inventory (BIPI): Development, reliability and validity*. *Anales de Psicología*. 26(1), 58–71. <https://doi.org/10.6018/91971>
3. Committee on Improving the Health, Safety, and Well-Being of Young Adults; Board on Children, Youth, and Families; Institute of Medicine; National Research Council; Bonnie RJ, Stroud C, Breiner H, editors. *Investing in the Health and Well-Being of Young Adults*. Washington (DC): National Academies Press (US). (2015). *Young Adults in the 21st Century*. <https://www.ncbi.nlm.nih.gov/books/NBK284782/>
4. Khan, F., Memon, B., Rehman, H.-U.-, Muhammad, S. S., & Ali A. (2015). *Prevalence of Needle Phobia among Young Patients Presenting to Tertiary Care Government Hospitals of Karachi Pakistan*. *International Journal of Research*. 2(1), 127–135. <http://internationaljournalofresearch.org/index.php/ijr/article/view/1300>
5. Kleinknecht, R. A., Thorndike, R. M., & Walls, M. M. (1999, February 23). *Factorial dimensions and correlates of blood, injury, injection and related medical fears: Cross validation of the Medical Fear Survey*. *Behaviour Research and Therapy*. <https://www.sciencedirect.com/science/article/abs/pii/0005796795000720?via=ihub>.
6. McLennon, J., & Rogers, M. A. M. (2019). *The fear of needles: A systematic review and meta-analysis*. In *Journal of Advanced Nursing* (Vol. 75, Issue 1). <https://doi.org/10.1111/jan.13818>

7. McMurtry, C. M., Noel, M., Taddio, A., Antony, M. M., Asmundson, et al. (2015). *Interventions for individuals with high levels of needle fear: Systematic review of randomized controlled trials and quasi-randomized controlled trials*. *Clinical Journal of Pain*. 31(10), S109–S123. <https://doi.org/10.1097/AJP.0000000000000273>
8. Milgrom, P., Coldwell, S. E., Getz, T., Weinstein, P., & Ramsay, D. S. (2015, January 5). **FOUR DIMENSIONS OF FEAR OF DENTAL INJECTIONS**. *The Journal of the American Dental Association*. <https://www.sciencedirect.com/science/article/abs/pii/S0002817715603932>.
9. Milovanović, B., Tomović, D., Janković, S. M., Grubor, I., Nikolić, L., Mijajlović, M., Mrvić, S., Divjak, A., Milojević, A., Djoković, J., Prokić, A., Bukonjić, A., Sekulić, M., Matić, V., Vukmirović, D., Dimitrijević, T., Nikolić, N., Jovanović, D., Milovanović, J., ... Antanasković, A. (2017). *Factors Influencing the Fear of Needles among Students of Medicine and Pharmacy*. 34(2), 147–158. <https://doi.org/10.1515/afmnai-2017-0016>
10. Orenius, T., Sa, H., Mikola, K., & Ristolainen, L. (2018). *Fear of Injections and Needle Phobia Among Children and Adolescents : An Overview of Psychological , Behavioral , and Contextual Factors*. 4, 1–8. <https://doi.org/10.1177/2377960818759442>.
11. Siddiqui, T. M., Wali, A., Abdullah, H., Khan, F. N. A., et al. (2016). *Evaluation of fear of injections and its association with avoidance of dental treatment*. 81–85. <https://doi.org/10.4103/2321-4619.188228>

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