

To Determine the Knowledge and Behaviours about the Treatment of Anaphylaxis in Children and Adolescents among Teachers

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Abstract:

Aim: Knowledge and behaviours about the treatment of anaphylaxis in children and adolescents among teachers is the goal of this study.

Material and Methods: A cross-sectional research was carried out on the teaching staff in order to evaluate their levels of knowledge, confidence, and attitude towards their part in the execution and treatment of anaphylaxis. Participants in this research were chosen using a method that was neither random nor completely at the participant's convenience.

Results: Just 22.5% of the pupils are aware of any of their classmates who have anaphylaxis. The vast majority of the mentors had no awareness whatsoever on anaphylaxis. Drugs were the most common cause of anaphylaxis, accounting for 83.75 percent of reported cases, followed by pollens (68.75 percent). In addition, 88.75% of the instructors stated that eggs were the most prevalent meal that caused anaphylaxis, followed by bananas (72.5%). In cases of anaphylaxis, the most common first aid action that would be carried out by the teachers in our study was to call an ambulance service (53.75%); only 2.5 percent of teachers would consider administering an epinephrine injection, and additionally, 3.7 percent of the teachers reported that they would use an antihistamine, whereas 26.2 percent of the teachers reported that they had extremely poor knowledge of any drug administration. When asked about the correct way to administer epinephrine, the majority of the instructors who participated in the current research (62.5%) did not know the answer, and only 20% of them selected the appropriate approach, which is an intramuscular injection.

Conclusion: The knowledge and practices of school teachers regarding anaphylactic reactions need to be strengthened. Teachers need further education regarding the management of allergic reactions encountered among students.

Keywords: Anaphylaxis, Reaction, Knowledge, Practices.

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Introduction

The life-threatening acute hypersensitivity response known as anaphylaxis is one of the most prevalent types of medical emergencies. One way to describe it is as an allergic response that spreads quickly throughout the body and affects several systems. The fast development of anaphylaxis to respiratory collapse makes it very dangerous and, in the absence of treatment, often deadly. Traditionally, anaphylactic reactions were classified as IgE-mediated responses, while anaphylactoid reactions were classified as IgE-independent occurrences. Current medical research has resulted in the diagnosis of anaphylaxis being used to include both of these

conditions. This unified nomenclature is now the recognised vernacular since the consequent clinical condition and therapy for each response are the same. Regardless of the cause, this is the case for all reactions, hence this terminology should be used. [1-3] In its most basic form, it is an unexpected emergency that involves a severe allergic response that poses a potential danger to life. [3]. The lifetime prevalence of anaphylaxis ranges from 0.05 to 2.0 percent, and there are around 50–2000 cases of the condition for every 100,000 people. [4]. These allergic responses are seen in children the vast majority of the time. [3,4] Children who have a history of food allergy

are more likely to have allergic responses to food, including anaphylaxis, at school [5,6]. These reactions may range from mild to life-threatening.

The fast release of inflammatory mediators is what causes the symptoms across several systems to arise. Foods have the potential to be a substantial trigger for anaphylaxis that is mediated by immunoglobulin E (IgE) in children. Those who have a history of anaphylaxis in their family, as well as those who suffer from allergies and asthma, are more likely to have anaphylaxis.

The majority of clinical manifestations of anaphylaxis take the form of a systemic syndrome that may include symptoms such as stridor, wheezing, or hypotension; itching of the skin; urticaria; angioedema; and erythema. If therapy is not administered, the response has the potential to quickly worsen, resulting in symptoms that are progressively life-threatening and maybe even deadly [7]. Since the majority of children spend the most of their time at school, they are more likely to have several allergic responses. Hence, teachers are often the first people to respond to situations that need first aid or that involve a medical emergency. It has been shown that educators do not have appropriate expertise or procedures in place to deal with students who have anaphylactic responses [8]. There is a dearth of research pertaining to the

awareness of anaphylaxis among instructors in schools. In light of the information presented above, the purpose of this research was to investigate teachers' levels of awareness of anaphylaxis, as well as their knowledge, attitudes, and practices regarding the care of anaphylactic patients.

Material and Methods

A cross-sectional research was carried out on the teaching staff in order to evaluate their levels of knowledge, confidence, and attitude towards their part in the execution and treatment of anaphylaxis. Participants in this research were chosen using a method that was neither random nor completely at the participant's convenience. Only instructors who were willing to take part in the study and gave their approval were included in the research; participants who were not educators were excluded.

Questionnaires that respondents were able to administer on their own were used to compile the data. The socio-demographic characteristics of the participants were included in the questionnaire, as well as a statement of the teacher's practical understanding of anaphylactic knowledge. These will be gathered after they have finished filling out the questionnaire, and then assessed by a computerized software system.

Results

Table 1: Demographic profile of the participants (n=80)

Study group	Number	Percentage
Age group in years		
>20	5	6.5%
20-30 years	11	13.57%
30-40 years	54	67.5%
40-50 years	10	12.5%
Sex		
Male	11	13.75%
Female	69	86.25%
Educational services in years		
0-10 years	46	57.5%
11-15 years	11	13.75%
>15 years	23	28.75%
Anaphylaxis		
Yes	28	35%
No	47	58.75%
May be	5	6.25%

The socioeconomic and demographic characteristics of eighty educators are shown in Table 1.

The ages ranged from below 20 up to a maximum of 50, with the majority falling into the older age groups. The maximum age was 50. (30-40years). Women made up an overwhelming majority of the responders (86.25%). The majority of those who responded had at least a

high school diploma.

Almost ninety percent of responders were faculty members at the bachelor's level. Science was the respondents' primary area of expertise, followed closely by English. In addition, 35 percent of those who participated in the survey have seen pupils suffering from anaphylaxis.

Table 2: Report of teachers' awareness of anaphylaxis

	Number	%
Understanding of any of school children with anaphylaxis		
positive	18	22.5%
negative	56	70%
May be	6	7.5%
Alertness regarding anaphylaxis		
positive	19	23.75%
negative	54	67.5%
Not sure	7	8.75%
Acquaintance about the signs of anaphylaxis		
positive	8	10%
negative	70	87.5%
Not sure	2	2.5%
Allergens causing anaphylaxis		
Drugs	67	83.75%
Pollen	55	68.75%
Insects sting	37	46.25%
Nuts	41	51.25%
No knowledge	7	8.75%
Eatables causing anaphylaxis		
Bananas	58	72.5%
Strawberries	23	28.75%
Nuts	40	50%
Eggs	71	88.75%
Seafood	47	58.75%
Medical aid needed to be performed in cases of anaphylaxis		
Epinephrine injection (EpiPen)	2	2.5%
Informing the family about the patient	9	11.25%
Call emergency ambulance service	43	53.75%
Performed CPR	2	2.5%
Injection of Antihistamines	3	3.75%
NIL knowledge	21	26.25%
First drug that should be administrated to the patient		
Antihistamine	8	10%
Drugs	5	6.25%
Epinephrine	21	26.25%
NIL knowledge	46	57.5%
Mode of injection of epinephrine		
Intramuscular	16	20%
Subcutaneous	8	10%
Intravenous	6	7.5%
No knowledge	50	62.5%

The mentors' collective expertise is shown in Table 2. Just 22.5% of the pupils are aware of any of their classmates who have anaphylaxis.

The vast majority of the mentors had no awareness whatsoever on anaphylaxis. Drugs were the most common cause of anaphylaxis, accounting for 83.75 percent of reported cases, followed by pollens (68.75 percent). In addition, 88.75% of the instructors stated that eggs were the most prevalent meal that caused anaphylaxis, followed by bananas (72.5%). In cases of anaphylaxis, the most common first aid action that would be carried out by the teachers in our

study was to call an ambulance service (53.75%); only 2.5 percent of teachers would consider administering an epinephrine injection, and additionally, 3.7 percent of the teachers reported that they would use an antihistamine, whereas 26.2 percent of the teachers reported that they had extremely poor knowledge of any drug administration. When asked about the correct way to administer epinephrine, the majority of the instructors who participated in the current research (62.5%) did not know the answer, and only 20% of them selected the appropriate approach, which is an intramuscular injection.

Table 3: Statement of teachers' practical knowledge of anaphylaxis

Have you ever heard of epinephrine as a drug?	Numbers	Percentage
Positive	13	16.25%
Negative	67	83.75%
Have you ever heard before about self-injection (EpiPen)?		
positive	37	46.25%
Negative	43	53.75%
If yes, do you have knowledge of self-injection (EpiPen) ?		
Positive	24	30%
Negative	56	70%
In cases of anaphylaxis: is there an action plan in school?		
Positive	12	15%
Negative	38	47.5%
No knowledge	30	37.5%
Are first-aid medicines for anaphylaxis available in school?		
Positive	9	11.25%
Negative	36	45%
No knowledge	35	43.75%

Just 46.25 percent of the instructors had heard about self-injection, hence they were not included in the research. The declaration of teachers' practical understanding of anaphylaxis is shown in Table 3, which may be seen here. From a practical standpoint, 83.75 percent of instructors had never heard of epinephrine being used as a medicine. Just thirty percent of the instructors were familiar with the drug epinephrine. In addition, 11.25 percent of respondents said that their school provided first aid medication in case students had anaphylactic reactions.

Discussion

Children have a much increased likelihood of experiencing an allergic response. [9,10] It is estimated that one in every 10,000 children will have an anaphylactic reaction each year, with approximately 82% of these incidents occurring in school-aged children. In the United States of America, anaphylaxis affects 30 out of every 100,000 people each year, with a death rate of between 1% and 2%. [12] The purpose of this research was to investigate the levels of knowledge, awareness, and attitudes around anaphylaxis held by instructors.

According to the findings of our survey, 22.5% of participants reported having seen a pupil who was suffering from anaphylaxis. The European Academy of Allergology and Clinical Immunology places a strong emphasis on the necessity of the expertise of the school employees in identifying and delivering first aid measures for children who are having allergic reactions as well as other children. [13-15]. Another research conducted by Ercan and colleagues found that 52% of instructors were aware of which of their children suffered from allergy diseases. [16] The vast majority of

instructors had any knowledge whatsoever on anaphylaxis.

In the current research, the chemicals that were reported to trigger anaphylaxis the most often were pollens (68.75%), followed by allergens (83.75%). while a different research found that insect stings were the most prevalent substance reported to trigger anaphylaxis (54.4%), followed by nuts (54.2) [8].

This is analogous to the results of the research conducted by Ercan et al., in which the majority of the instructors (54%) said that pollen was the most important cause, followed by diet (47%) mites (40%) and medications (30%). (16). Similar findings were published by Alsuhaibani et al., who discovered that just 8% of people felt that participating in sports may trigger anaphylaxis. In addition, 88.75% of the instructors stated that eggs were the most prevalent meal that caused anaphylaxis, followed by bananas (72.5%).[8]

In the current research, the most frequent first aid action that would be taken by the instructors in our study was to contact an ambulance service. This was shown to be the case in both of our studies. Whereas Alsuhaibani et al. reported that having knowledge of first aid procedures to carry out during an anaphylactic event is essential, and the most common initial reaction of teachers towards an anaphylactic event would be to notify the child's family and to call for an emergency ambulance, it is important for teachers to be aware of these procedures. [8] According to the findings of Ercan et al., the first action that was taken in the majority of instances of anaphylaxis was to alert the nurse, who would then offer first aid. [16] In contrast, Dumeier et al. presented a research that was based on an educational session that lasted anywhere from four to twelve

weeks and was geared on educating preschool instructors about allergies, anaphylactic crises, and how to use auto-injectors [17]. While the current survey found that just 2.5% of instructors would contemplate delivering an epinephrine injection, 3.75 % of teachers said they would use an antihistamine, and 26.25 % of teachers said they had a very inadequate grasp of how any medicine should be administered. Anaphylaxis is a dangerous disease that requires prompt identification, and evidence-based treatment recommendations recommend that rapid administration of epinephrine should be the initial therapeutic option for an anaphylactic episode [18,19]. At schools, an epinephrine auto-injector may be administered by the patient, the school nurse, a teacher, or any other member of the certified school staff. From the perspective of view of educators, 83.7% of instructors had never heard of epinephrine being used as a medicine. Just thirty percent of the instructors were familiar with the drug epinephrine. In addition, epinephrine is the therapy of choice for the first phase of anaphylaxis emergency care. [20] According to studies, 16–18% of children who have food allergies have a response after unintentionally consuming foods that they are allergic to. [21,22] Children who have not previously been diagnosed with a food allergy account for about a quarter of the dangerous and sometimes fatal reactions that are reported to occur in schools. [22,23]

Conclusion

There is a need for improvement in both the understanding and practises of Indian educators with respect to anaphylactic responses. The education of teachers must be expanded in order to include the treatment of allergic responses that may occur among children.

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