DEVELOPING PRE-SERVICE TEACHERS’ COMPETENCIES OF STUDENTS’ ALLERGIES MANAGEMENT IN SCHOOL ENVIRONMENT

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Poorly developed teachers’ competences for managing children’s allergies can pose a significant problem to wellbeing of children in pre- and school environment. The purpose of this study was to explore theoretical understandings of management of an allergic child among pre-service teachers (first phase) and to evaluate first attempts to develop an allergy and anaphylaxis management course for pre-service teachers during their education at the university (second phase). 572 pre-service teachers participated in the first phase and 62 (not the same participants as in the first phase) in the second one. They fulfilled Teachers’ Health Competences Development–Allergy Questionnaire (THCDAQ) in the first phase and the Teachers’ Health Competences Development–Anaphylaxis Management Questionnaire (THCDAMQ) in the second phase. The THCDAMQ comprised knowledge items about allergy and anaphylaxis and attitude items on managing children’s anaphylaxis three times: before, immediately after, and 14 days after the course. Results from the first phase show, that pre-service teachers showed positive attitudes towards learning more about different children’s health issues. There was an average understanding of managing allergic diseases of a child. After the second phase, results indicate that there was a statistically significant difference in THCDAMQ scores across the three times of measurements (p ≤ .000). It can be concluded that pre-service teachers need competences for managing allergic child in school environment, they express positive attitudes towards these topics, and they show increased understanding of managing child’s allergic reactions. Basic educational program in allergy management has positive effects and, for that reason, all pre-service teachers should be exposed to specific educational programs that can develop adequate health competences.

Keywords: allergic student, allergy and anaphylaxis management, pre-service teachers’ health competences

INTRODUCTION

Allergies are one of the most common paediatric presentations, placing significant burden on the health system and contributing substantially to impaired quality of life and school absences. The most severe allergic reaction is anaphylaxis. The majority of anaphylaxis occurs outside health institutions, and for that reason parents, pre-school and school employees (especially teachers) and children must be well educated about what anaphylaxis is and how it is treated before medical personnel arrive on the scene. Several studies, including Europreval study across Europe, showed low preparedness for managing a child at risk of anaphylaxis in a kindergarten or school (Rankin & Sheikh, 2006; Le, Kummeling, Dixon, Barreales Tolosa, Ballmer-Weber, Clausen, et al., 2014). Literature shows that 20% of food allergic reactions occur in schools, 2/3 of schools have at least one allergic student who can develop anaphylaxis, and most school employees do not have sufficient knowledge to adequately respond to anaphylaxis. Some studies show that only 12% of teachers can correctly apply epinephrine auto-injector. 75% of children with anaphylaxis do not receive adequate first aid (Mahl Wahn & Niggemann, 2005). Education about how to prevent, recognize and act during an allergic reaction in kindergarten or school is an important part of managing a child with food allergies (Polloni, Lazzarotto, Toniolo, Ducolin & Muraro, 2013). However, efficacy trials of different models of knowledge improvement within communities on recognizing and managing anaphylaxis training...
are missing (Muraro, Clark, Beyer, Borrego, Borres, Lødrup Carlsen, et al., 2010). Even shorter training courses in allergy and anaphylaxis management for school personnel significantly improve participants’ knowledge about this topic (Polloni et al., 2013; Lanser, Covar & Bird, 2016), but there are insufficient data about the persistence of this knowledge after a longer time. Given the ramifications of delayed treatment, removing barriers to recognition and treatment of anaphylactic events in schools is an important public health goal (Hogue, Goss, Hollis, Silvia & White, 2016).

The purpose of this study was to explore the current understanding of an allergic child management among pre-service teachers and to explore how short theoretical and practical intervention programme influence pre-service teachers’ knowledge about allergy and anaphylaxis.

METHOD

Altogether, 572 pre-service primary and lower secondary school teachers (students) participated in the first phase of the study (7% male; 93% female; average age 21.5 (SD=2.7) years). 319 (56%) of students were enrolled in the 1st year and 253 (44%) of students were enrolled in the 4th (last) year of the undergraduate pre-service teacher education programs at the Faculty of Education, University of Ljubljana. 41.8% of students studied subjects with more science background, and 58.2% of students did not have science background. In more detail, 15.6% of them will become pre-school teachers (Group 1), 21.9% subject teachers (Group 2), 33% social pedagogy, special education, and art teachers (Group 3), and 29.5% primary school teachers (Group 4). 27.8% of students are allergic and 71.9% are not, according to them. The data were collected using Teachers’ Health Competences Development–Allergy Questionnaire (THCDAQ). THCDAQ comprises 6 demographic items, 14 attitude and beliefs items, and 10 knowledge items.

In the second phase of the study, 62 post-graduate pre-service primary and lower secondary school teachers (all female; median age 24.5) participated in the study. 27.4% of pre-service teachers reported that they are allergic themselves. Participants were exposed to 90 minutes theoretical (about allergy and anaphylaxis) and practical (using adrenalin auto-injector) educational intervention. Participants answered the Teachers’ Health Competences Development–Anaphylaxis Management Questionnaire (THCDAMQ) which comprised knowledge items about anaphylaxis (Max 7 points) and attitude items on managing children’s anaphylaxis three times, before intervention, immediately after and 14 days after the intervention.

RESULTS

Results from the first phase of the study indicate that pre-service teachers show positive attitudes towards their health issues and that students would appreciate basic education during their undergraduate pre-service teacher education. Overall, there is an average understanding of allergy between students participating in this study (59.4%; SD=16.1% success). There is no statistically significant difference in students’ basic understanding of allergy regarding their level of education, science or non-science background, and if students have allergies according to their self-report. There is statistically significant differences between male (M=53.0; SD=18.3) and female (M=59.9; SD=15.8) students in achievements on knowledge items, but we have to explore this difference further due to small sample of male students (t=−2.645 (df=568); p=.008). A one-way between-groups analysis of variance (ANOVA) was conducted to explore the impact of students’ study programme (see Groups above) on their allergy knowledge achievements. Participants were divided into four groups according to their age. There was a statistically significant difference in achievement scores for the four groups: $F (3,568)=6.4$, $p=.000$. Post-hoc comparisons using the Tukey HSD test indicated that the mean score for Group 3 ($M=55.6$, $SD=16.4$) was significantly different from Group 2 ($M=63.3$, $SD=16.4$).
Continuing the study in the second phase, pre-service teachers showed positive attitudes towards learning more about different children’s health issues (91.9%). All of them expressed that child health topics were very important for each teacher and all wanted to increase their health competences. 90.3% thought that teacher is responsible for pupils’ health issues during school time. 71% reported that they haven’t been exposed to any activities that would promote their health competences development. The results of the Friedman Test indicated that there was a statistically significant difference in THCDAMQ scores across the three time points (pre-intervention, post-intervention, 14-days follow-up $\chi^2(2, N = 37) = 48.127, p \leq .000$). Inspection of the median values showed an increase in total scores on items that test post-graduate pre-service teachers' knowledge about anaphylaxis from pre-intervention ($Md = 3$; IQR 2-4.5) to post-intervention ($Md = 6$; IQR 6-6) and a follow-up ($Md = 6$; IQR 6-6) scores.

CONCLUSION

It can be concluded that different independent variables that can influence learning about allergies have no impact and for that reason all pre-service teachers should be exposed to specific educational programs that can develop adequate health competences. Intervention anaphylaxis programme had positive effect on students’ knowledge and attitudes towards school child allergy. Students retained their knowledge after intervention. Pre-service teachers would manage a child with anaphylaxis more efficiently when intervention anaphylaxis programme is available to them.

REFERENCES


