The reliability and validity of the Turkish version of the school-based asthma and allergy screening questionnaires

Running Title: Asthma and Allergy Screening Questionnaires

[1] Mahmut KILIC [2] Ghaniya EDE [3] Tugba UZUNCAKMAK

[1] Associate professor, Yozgat Bozok University, Faculty of Medicine, Department of Public Health, Yozgat, Turkey. E-mail: mahmutkilic@yahoo.com ORCID: 0000-0002-8921-1597

[2] Associate professor, Yozgat Bozok University, Faculty of Medicine, Department of Pediatrics, Yozgat, Turkey. E-mail: ghaniyadaar@gmail.com ORCID: 0000-0002-9534-3596

[3] Assistant professor, Yozgat Bozok University, Faculty of Health Sciences, Department of Nursing, Yozgat;Turkey. E-mail: tugba.uzuncakmak@yobu.edu.tr ORCID: 0000-0001-7614-7728

Corresponding Author:

Mahmut KILIC, PhD

Associate professor

Yozgat Bozok University

Tıp Fakültesi Halk Sağlığı AD.

E.Akdağ Kampüsü 66900-Yozgat, Turkey

Phone: +90(542) 773-6196
Fax: +90(354) 214-0612
e-mail: mahmutkilic@yahoo.com

This study abstract was presented as a poster in the 18th National Congress of Public Health, 5-9 October 2015 in Konya, Turkey.

STUDENT QUESTIONNAIRE

School name: …………………………………………. **Grade: …………….**

Name and surname: …………………………………………………. Student No: …………….

Age: ………… .. **Gender:** 1) Boy 2) Girl

Are there any smokers in your family (You can check multiple options)?

1) No 2) My father 3) My mother 4) My brother 9-Other …………………

In the last 7 days, have you been smoking indoors next to you?

1) No 2) Yes every day 3) 3-5 days 4) 1-2 days 9) Other …………………… ..

Please tell us how often you have any of the following:		Never	Sometime s	A lot
1.	My breathing sounds noisy or wheezy.			
2.	It is hard to take a deep breath.			
3.	It is hard for me to stop coughing.			
4.	My chest feels tight or hurts after I run, play hard, or do sports.			
5.	I wake up at night coughing.			
6.	I wake up at night because I have trouble breathing.			
7.	I cough when I run, climb stairs or play sports.			
8.	My eyes get itchy, puffy or burn.			
9.	I have problems with a runny or stuffy nose.			
	Please answer the following questions:		Yes	No
10.	A doctor or nurse told me that I have asthma.			
11.	I stayed in the hospital overnight for asthma or trouble breathing this past year.			
12.	I take medicine or use an inhaler for asthma.			
13.	I take medicine for allergies.			

PARENT OR GUARDIAN QUESTIONNAIRE

School name: …………………………………………. **Grade: …………….**

Child's name and surname: ……………………………………… Student no: …………….

Please tell us how often your child has any of the following. (If your child has more problems in some seasons of the year, please tell us about problems during the *worst* season.) Does your child . . .

		Never	Sometimes	A lot	Don't know
1.	Make noisy or wheezy sounds when breathing?				
2.	Have a hard time taking a deep breath?				
3.	Develop coughs that won't go away?				
4.	Complain about a chest that feels tight or hurts after running, playing hard, or doing sports?				
5.	Wake up at night coughing?				
6.	Wake up at night because of trouble breathing?				
7.	Cough when running, climbing stairs or playing sports?				
8.	Miss days of school (absent from school) because of breathing problems?				
9.	Have eyes that itch, get puffy or burn.				
10.	Have problems with a runny, stuffy nose.				

	Please answer the following questions about your child:	Yes	No	Don't Know
11.	Has a doctor or nurse told you that your child has asthma, reactive airway disease or wheezy bronchitis?			
12.	Has your child stayed in the hospital overnight for asthma or for trouble breathing this past year?			
13.	Does your child take medicine (or use an inhaler) for asthma?			
14.	Does your child take medicine for allergies?			

15. Education level of the mother:
1) Not finished school 2) Primary school 3) Secondary school 4) High school 5) University
16. Education level of father:
1) Not finished school 2) Primary school 3) Secondary school 4) High school 5) University
17. How is the type of heating you live in? 1) With heater 2) With stove
18. Is there any asthma problem in the child's family or close relatives (You can check multiple options)?
1) Not available 2) Mother 3) Father 4) Brother 5) Mother's siblings 6) Father's siblings
7) Midwife-grandfather 9) Other …………………
19. Is there any smoker in the family (You can choose more than one option)?
1) None 2) Father 3) Mother 4) Sibling 9-Other …………………
20. For the past 7 days, has you been smoking with the child indoors at home?
1) No 2) Every day 3) 3-5 days 4) 1-2 days 9) Other ……………………
21. How do you think the income level of your family?
1) Very good 2) Good 3) Middle 4) Bad 5) Very bad

Figure 4. Final version of the student questionnaire.

PARENT OR GUARDIAN QUESTIONNAIRE

Student's Name ____________________ **Age** ____ **Grade** ____ **Teacher** ______________

Student's Race: ❐ African American ❐ Asian American ❐ Hispanic ❐ White ❐ Native American ❐ Other

Please tell us how often your child has any of the following. (If your child has more problems in some seasons of the year, please tell us about problems during the *worst* season.) Does your child . . .

Question	NEVER	SOMETIMES	A LOT	Don't Know
1. Make noisy or wheezy sounds when breathing?	o	O	O	❐
2. Have a hard time taking a deep breath?	o	O	O	❐
3. Develop coughs that won't go away?	o	O	O	❐
4. Complain about a chest that feels tight or hurts after running, playing hard, or doing sports?	o	O	O	❐
5. Wake up at night coughing?	o	O	O	❐
6. Wake up at night because of trouble breathing?	o	O	O	❐
7. Cough when running, climbing stairs or playing sports?	o	O	O	❐
8. Miss days of school (absent from school) because of breathing problems?	o	O	O	❐
9. Have eyes that itch, get puffy or burn.	o	O	O	❐
10. Have problems with a runny, stuffy nose.	o	O	O	❐

Please answer the following questions about your child:

Question	YES	NO	Don't Know
11. Has a doctor or nurse told you that your child has asthma, reactive airway disease or wheezy bronchitis?	O	O	❐
12. Has your child stayed in the hospital overnight for asthma or for trouble breathing this past year?	O	O	❐
13. Does your child take medicine (or use an inhaler) for asthma?	O	O	❐
14. Does your child take medicine for allergies?	O	O	❐

SUGGESTED SCORING KEY

Asthma: For Questions 1 through 8, assign a "1" for each "sometimes" or "a lot" response. Add the scores. If the total is 2 or more, referral for asthma diagnosis may be indicated. A total score of 2 has an estimated sensitivity of 58% and specificity of 69%, according to the clinical predictability of the questionnaire in a validation study.*

Allergy: For Questions 9 and 10, assign a "1" for each "sometimes" or "a lot" response. Add the scores. If the total is 1 or more, referral for allergy diagnosis may be indicated. A score of 1 has an estimated sensitivity of 78% and specificity of 53%, according to the clinical predictability of the questionnaire in a validation study.*

* *Ann Allergy, Asthma Immunol.* 2004;93:36-48. Copyright 2004. Permission is hereby granted for the reproduction of this questionnaire as it appears for use by school-based allergy and asthma screening programs.

Figure 5. Final version of the parent/guardian questionnaire.