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Does Socioeconomic Status Affect Mental Well-being Among Children with Asthma in Kosovo?

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Abstract

The aim of this study was to investigate the relationship between mental well-being – as assessed by the Strengths and Difficulties Questionnaire (SDQ) among children with asthma in Kosovo and socioeconomic status (SES).

Methods and Results: For this cross-sectional observational study, data were collected from five regions of Kosovo, public and private institutions, public hospitals and primary healthcare facilities in each area, a tertiary level hospital, and two private immunology clinics in the capital city. The survey included 161 Kosovar children (mean age of 11.1±2.7 years) with asthma, aged 7-16 years, and their caregivers. The survey questionnaires used were those of the American Academy of Pediatrics: The Children's Health Survey for Asthma (CHSA), the parent and child version (CHSA-C), and the Strengths and Difficulties Questionnaire (SDQ). SDQ showed conspicuous (borderline or abnormal) results in 25.2% of children. None of the scales of the SDQ, except prosocial behavior, showed statistically significant differences across SES categories. Prosocial behavior scores increased significantly with increasing SES.

Conclusion: Children with asthma from lower SES families in Kosovo have more social contact problems but do not show reduced mental well-being nor more conduct problems.(**International Journal of Biomedicine. 2023;13(2):286-291.**)

Keywords: children • asthma • strengths and difficulties • socioeconomic status • Kosovo

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Abbreviations

SDQ, the Strengths and Difficulties Questionnaire; **CHSA**, the Children's Health Survey for Asthma; **CHSA-C**, the CHSA-Child Version; **SES**, socioeconomic status; **TDS**, Total Difficulties Score.

Introduction

Asthma, the most common chronic condition in childhood, is a major public health issue for school-age children and children in general.(1) Asthma affects 14% of the world's children.(2) In recent years, the prevalence of asthma symptoms increased in children and adolescents globally, with a consistent burden on health systems.(3) Social determinants of health, such as housing and access to care, significantly impact the health of children with asthma.(4) In particular, children living in low socioeconomic communities are vulnerable to poor health outcomes.(5)

Poverty, unequal distribution of wealth, and unequal access to information, education, and healthcare services are important factors that impact life expectancy, morbidity, and mortality. Therefore, socioeconomic status (SES) is one

of the important determinants of morbidity and mortality.[2] A wealth of evidence demonstrates that health problems are more prevalent in low SES patients.[6-8]

A link between asthma, stress, and psychiatric illnesses has been documented.[9] The the Strengths and Difficulties Questionnaire (SDQ), as applied in this study, is a cost-effective instrument for detecting deviant behavior and psychosocial problems in children and adolescents, particularly in primary health care, which helps in decisions for referral to secondary healthcare facilities.[10,11] It is especially appropriate for detecting behavioral disorders in countries lacking skilled experts in this area.[12]

The self-reporting SDQ is dedicated to youths aged 11 years and above, but it can also be used in children as young as 8.[13] Several studies have shown a relationship between asthma and mental health.[14-17]

Family functioning is an essential predictor of health-related quality of life in asthmatic children.[18] Family cohesion has been shown to be an important protective factor for children with asthma.[19] Besides family structure, family well-being impacts a child's asthma.

The aim of this study was to investigate the relationship between mental well-being – as assessed by the SDQ among children with asthma in Kosovo and SES.

Materials and Methods

Study Design

For this cross-sectional observational study, data were collected from five regions of Kosovo, public and private institutions, public hospitals and primary healthcare facilities in each area, a tertiary level hospital, and two private immunology clinics in the capital city. Questionnaires were administered by trained personnel.

Although physician-diagnosed asthma was the first inclusion criterion, for selection, we additionally applied international criteria. For asthma definitions, we used: (1) wheezing in the past 12 months; (2) wheezing and waking up with breathlessness or breathlessness at rest in the past 12 months; (3) diagnosed asthma; (4) asthma severity based on GINA classification.

Patients

The survey included 161 Kosovar children with asthma, aged 7-16 years, and their caregivers. Participants were enrolled on a consecutive basis.

Enrolled children and parents were provided with the questionnaires. Data were collected over five months in the selected centers until the projected sample size was achieved. The research was completed in 2014. Parents and children over 16 years of age signed an informed consent. Children and adolescents between 10 and 16 completed the questionnaire by themselves. Children younger than 10 years were interviewed by trained medical personnel.

Inclusion criteria were age 7-16 years, physician-diagnosed asthma, and living in Kosovo for the past year. This study also included three subjects slightly outside these criteria, one aged 6 years and two subjects aged 17 years. Exclusion criteria were other chronic diseases in the child or severe acute diseases (except asthma exacerbations) in the past two weeks.

Measurements

The survey questionnaires used were those of the American Academy of Pediatrics: CHSA, the parent and child version (CHSA-C), and SDQ.

CHSA – parent version

CHSA is an asthma-specific, health status, self-report instrument completed by parents of children with chronic asthma aged 5-16 years. It consists of 46 core items, computed for five asthma-specific domains for assessing a child's physical health (12 items), child activity (4 items), child and family emotional health (7 items); it also covers additional items about healthcare utilization, asthma triggers, and family demographics (23 items). Scores were calculated for each scale (scaled to 0-100), with a higher score indicating better health.

The questionnaire was translated into Albanian and back-translated by two physicians. Additional questions were included to cover environmental conditions in the area of living. There are different questionnaire versions available concerning the length of recall. We used the version for the two-week recall period.

CHSA-C – child version

The CHSA-C was adapted from the CHSA parent version with numerous child-friendly modifications.[18] The resulting instrument is an interviewer-administered (children aged 7-16 years) or self-completed (children aged 10-16 years) instrument for children with asthma. CHSA-C consists of 21 core items covering asthma-specific domains: child physical health (7 items), child activities (3 items), and child emotional health (2 items); additional items cover healthcare utilization, asthma triggers, and child demographics (9 items).

Children's Strengths and Difficulties Questionnaire

The SDQ used was self-rated by children and covered five topics or scales comprising 25 items, divided into prosocial, hyperactivity, emotional symptoms, and conduct problems.[19,20] Each question can be answered by one of three categories (Not True, Somewhat True, and Certainly True) that are coded as 0, 1, or 2. The sum of the codes gives a scale score, which is categorized into three categories: normal, borderline, and abnormal. A Total Difficulties Score (TDS) can be calculated by aggregating the scores for the emotional symptoms, conduct problems, hyperactivity-inattention, and peer problems subscales (range 0–40). For each scale, the score can reach 10 points, and TDS can earn 40 points.

Socioeconomic status

SES assignment was based on the mother's education, size of the flat (sqm per inhabitant), and living standard. These variables were categorized into three levels. The average of these three indicators defined the SES as follows: less than 2 was designated "low SES," 2 to 2.3 as "lower average," and above 2.3 as upper average. This assignment by tertiles was chosen since high SES is defined by the college/university education of the mother, 40 or more sqm flat space, and an excellent living standard was present in only three participants.

Statistical analysis was performed using statistical software package SPSS version 23.0 (SPSS Inc, Armonk, NY:

IBM Corp) and Statistica version 10.0 (StatSoft Inc., USA). Comparisons between groups were made for illustrative purposes by categorizing the different scales; however, statistical comparisons were performed using the scores themselves. SDQ scales were analyzed by General Linear Models with SES as the main independent variable corrected for age, gender, family size, and asthma severity. All data obtained were processed without imputation for missing data.

Ethical approval for this study was obtained from the Medical Faculty Ethics Committee, at University of Prishtina, Kosovo. Written informed consent was obtained from each research participant (or the participant's parent/guardian).

Results

Overall, 161 children (mean age of 11.1±2.7 years) with asthma were included in the study: 99(61.5%) males and 62(38.5%) females. Most children were from urban areas (101[62.7%]), with an average of seven family members living together (Table 1).

Table 1.

Overview of demographic data for the total sample of children with asthma

Variable	Category	n	%
Sex	Total	161	100.0
	Female	62	38.5
	Male	99	61.5
Age (years)	7-10	73	45.3
	11-14	64	39.8
	15+	24	14.9
	mean ± SD	11.1±2.7	
Residence	City	101	62.7
	Village	60	37.3
Marital status of the child's parents or guardians	Married	157	97.5
	Divorced	2	1.2
	Widowed	2	1.2
Parent's employment	Yes	93	57.8
	No	68	42.2
Family members in the household	0-4	32	19.9
	5-9	109	67.7
	10-14	16	9.9
	15+	4	2.5
	mean ± SD	6.7±3.1	
Living standard	Low	22	13.7
	Average	76	47.2
	Good	53	32.9
	Very good	10	6.2

Family structure was a joint household with married parents in 157(97.5%). Only 93(57.8%) interviewed parents were employed. According to the classification of the living standard, almost half of the respondents had an average living standard (76[47.2%]), and 53(32.9%) respondents had a good living standard (Table 1).

SDQ showed conspicuous (borderline or abnormal) results in 25.2% of children. Among participants, 21(13.2%) children with asthma had abnormal behavioral characteristics, and 19(11.9%) were classified as borderline. Emotional symptoms were categorized as abnormal in 10.1% and borderline in 6.9%; conduct problems in 11.9% as abnormal and 14.5% as borderline; hyperactivity in 5.7% as abnormal and 11.3% as borderline; peer problems in 10.1% as abnormal and 18.2% as borderline; and prosocial behavior was classified as abnormal and borderline in 3.1% each (Table 2).

Table 2.

Categorized scores of the subscales and total scale of SDQ in relation to SES.

Scale	Category	L-SES	LA-SES	UA-SES	Total
Conduct Problems	Normal	36(70.6%)	39(73.6%)	42(76.4%)	117(73.6%)
	Borderline	6(11.8%)	9(17.0%)	8(14.5%)	23(14.5%)
	Abnormal	9(17.6%)	5(9.4%)	5(9.1%)	19(11.9%)
Emotional Symptoms	Normal	40(78.4%)	43(81.1%)	49(89.1%)	132(83.0%)
	Borderline	2(3.9%)	6(11.3%)	3(5.5%)	11(6.9%)
	Abnormal	9(17.6%)	4(7.5%)	3(5.5%)	16(10.1%)
Hyper-activity	Normal	40(78.4%)	47(88.7%)	45(81.8%)	132(83.0%)
	Borderline	8(15.7%)	4(7.5%)	6(10.9%)	18(11.3%)
	Abnormal	3(5.9%)	2(3.8%)	4(7.3%)	9(5.7%)
Peer Problems	Normal	35(68.6%)	36(67.9%)	4378.2%)	114(71.7%)
	Borderline	10(19.6%)	12(22.6%)	7(12.7%)	29(18.2%)
	Abnormal	6(11.8%)	5(9.4%)	5(9.1%)	16(10.1%)
Prosocial Behavior	Normal	47(92.2%)	48(90.6%)	54(98.2%)	149(93.7%)
	Borderline	2(3.9%)	2(3.8%)	1(1.8%)	5(3.1%)
	Abnormal	2(3.9%)	3(5.7%)	0(0.0%)	5(3.1%)
Total	Normal	33(64.7%)	42(79.2%)	44(80.0%)	119(74.8%)
	Borderline	7(13.7%)	6(11.3%)	6(10.9%)	19(11.9%)
	Abnormal	11(21.6%)	5(9.4%)	5(9.1%)	21(13.2%)

L-SES - low SES; LA-SES, lower average SES; UA-SES - upper average SES

None of the scales of the SDQ, except prosocial behavior, showed statistically significant differences across SES categories (Table 3). Prosocial behavior scores increased significantly with increasing SES.

Table 3.

Adjusted* means and 95% CI by categories of SES for subscales of SDQ (range 0-10) and the total score (range 0-40).

Subscale	L-SES		LA-SES		UA-SES	*P* (overall)
	mean (95% CI)	*P* vs. UA-SES	mean (95% CI)	*P* vs. UA-SES	mean (95% CI)	
Conduct Problems	2.81 (2.30-3.32)	0.256	2.47 (2.00-2.93)	0.821	2.39 (1.91-2.87)	0.484
Emotional Problems	3.67 (3.10-4.24)	0.375	3.67 (3.14-4.19)	0.326	3.30 (2.76-3.84)	0.557
Hyperactivity	3.63 (3.04-4.23)	0.642	3.30 (2.76-3.84)	0.738	3.43 (2.87-3.99)	0.721
Peer Problems	2.70 (2.12-3.28)	0.921	2.75 (2.22-3.28)	0.796	2.65 (2.10-3.20)	0.966
Prosocial Behavior	8.68 (8.20-9.15)	0.063	8.67 (8.23-9.10)	0.037	9.32 (8.87-9.77)	0.043
Total	12.81 (11.03-14.59)	0.424	12.19 (10.56-13.81)	0.723	11.77 (10.09-13.45)	0.725

* *Adjusted for asthma severity, gender, age and family size; L-SES - low SES; LA-SES, lower average SES; UA-SES - upper average SES; P-values overall and for comparisons against upper average (UA) SES (Bonferroni corrected) from General Linear Model analysis.*

Discussion

SES is associated with environmental and health inequalities, and environmental injustice is shown to be correlated with health outcomes and quality of life, especially in children, as a more vulnerable population group.[20] Low SES is often a barrier to healthcare utilization and medications, especially for asthma, when multiple and prolonged medications are needed.[21] Children with asthma living in urban environments are at risk for experiencing problems like anxiety, withdrawal, depression, and difficulties at school. Psychological stress increases the risk of asthma episodes. Acute stresses, chronic family stress, and a combination of both increase the production of asthma-related cytokines, IL-4, IL-5, and IFN-γ, which explains the impact of negative life events on exacerbating asthma.[22] In our study, mental health among children with asthma assessed by the SDQ showed conspicuous results (borderline or abnormal) in 25% of children, a result similar to that from other studies conducted in Europe. For most SDQ scores, differences between France and the UK were smaller than those between France and the US.[23] The distributions of SDQ scores are very similar across Nordic countries.[24] SDQ findings in five countries of Southern Europe: Italy, Spain, Portugal, and Croatia, show many similarities, but according to their teachers‘ ratings, Italian pupils were classified as exhibiting less prosocial behavior than their Spanish and Portuguese age-mates, whereas the Portuguese children were rated as being more hyperactive and inattentive than comparable Italian and Spanish children.[25]

SDQ scale scores showed no statistically significant difference except for prosocial behavior between SES groups. In several studies, findings indicate an association between SES and children‘s mental health. Lower SES increases the risk of unmet needs for services. Parents of children with psychological difficulties were less likely to seek a consultation if household income was low.[26] In the German Health Interview and Examination Survey for Children and Adolescents - KIGGS, 20.6% were classified as abnormal in the SDQ, with low SES increasing the risk 2.6-fold.[27] In Greece, adolescents with low SES reported more difficulties than those with medium and high SES.[28] Also, in Slovenia, adolescents with a lower socioeconomic position were reported to show poorer mental health than those with a higher SES.[7] Low SES consistently predicted mental health problems similarly in children and adolescents, with low SES increasing the risk for psychiatric problems and violent behaviors.[29,30] While these results were obtained from the general population, chronic diseases such as asthma should make problems due to limited resources of families that are strongly related to SES more apparent. Hence it was expected that SES would show marked differences concerning mental health as assessed by the SDQ. The negative results could have a number of reasons: first, the population investigated did not show pronounced differences in SES, with the highest-level present in only three participants; second, a child in the family suffering from a chronic disease might increase family cohesion, thus compensating at least in part for lack of financial resources; third, in a country like Kosovo, differences in SES are of a less pronounced impact on access to health care. These reasons could, at least in part, explain the lack of a strong association between SES and mental health. That prosocial behavior was the only area related to SES is telling insofar as a stigmatizing effect of a disease like asthma may be associated with the social community in which the child develops.

Conclusion

Children with asthma from lower SES families in Kosovo have more social contact problems but do not show reduced mental well-being nor more conduct problems.

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Competing Interests

The authors declare that they have no competing interests.

References

1. Krieger J. Home is Where the Triggers Are: Increasing Asthma Control by Improving the Home Environment. Pediatr Allergy Immunol Pulmonol. 2010 Jun;23(2):139-145. doi: 10.1089/ped.2010.0022.
2. Azmeh R, Greydanus DE, Agana MG, Dickson CA, Patel DR, Ischander MM, Lloyd RD Jr. Update in Pediatric Asthma: Selected Issues. Dis Mon. 2020 Apr;66(4):100886. doi: 10.1016/j.disamonth.2019.100886.
3. Ferrante G, La Grutta S. The Burden of Pediatric Asthma. Front Pediatr. 2018 Jun 22;6:186. doi: 10.3389/fped.2018.00186.
4. Federico MJ, McFarlane AE 2nd, Szefler SJ, Abrams EM. The Impact of Social Determinants of Health on Children with Asthma. J Allergy Clin Immunol Pract. 2020 Jun;8(6):1808-1814. doi: 10.1016/j.jaip.2020.03.028.
5. Kachmar AG, Wypij D, Perry MA, Curley MAQ; RESTORE Study Investigators. Income-driven socioeconomic status and presenting illness severity in children with acute respiratory failure. Res Nurs Health. 2021 Dec;44(6):920-930. doi: 10.1002/nur.22182.
6. Ekerljung L, Sundblad BM, Rönmark E, Larsson K, Lundbäck B. Incidence and prevalence of adult asthma is associated with low socio-economic status. Clin Respir J. 2010 Jul;4(3):147-56. doi: 10.1111/j.1752-699X.2009.00164.x.
7. Klanšček HJ, Ziberna J, Korošec A, Zurc J, Albreht T. Mental health inequalities in Slovenian 15-year-old adolescents explained by personal social position and family socioeconomic status. Int J Equity Health. 2014 Mar 28;13:26. doi: 10.1186/1475-9276-13-26.
8. Bjur KA, Wi CI, Ryu E, Derauf C, Crow SS, King KS, Juhn YJ. Socioeconomic Status, Race/Ethnicity, and Health Disparities in Children and Adolescents in a Mixed Rural-Urban Community-Olmsted County, Minnesota. Mayo Clin Proc. 2019 Jan;94(1):44-53. doi: 10.1016/j.mayocp.2018.06.030.
9. Peters TE, Fritz GK. Psychological considerations of the child with asthma. Child Adolesc Psychiatr Clin N Am. 2010 Apr;19(2):319-33, ix. doi: 10.1016/j.chc.2010.01.006.
10. Mathai J, Anderson P, Bourne A. Comparing psychiatric diagnoses generated by the Strengths and Difficulties Questionnaire with diagnoses made by clinicians. Aust N Z J Psychiatry. 2004 Aug;38(8):639-43. doi: 10.1080/j.1440-1614.2004.01428.x.
11. Crone MR, Vogels AG, Hoekstra F, Treffers PD, Reijneveld SA. A comparison of four scoring methods based on the parent-rated Strengths and Difficulties Questionnaire as used in the Dutch preventive child health care system. BMC Public Health. 2008 Apr 4;8:106. doi: 10.1186/1471-2458-8-106.
12. Alyahri A, Goodman R. Validation of the Arabic Strengths and Difficulties Questionnaire and the Development and Well-Being Assessment. East Mediterr Health J. 2006;12 Suppl 2:S138-46.
13. Muris P, Meesters C, Eijkelenboom A, Vincken M. The self-report version of the Strengths and Difficulties Questionnaire: its psychometric properties in 8- to 13-year-old non-clinical children. Br J Clin Psychol. 2004 Nov;43(Pt 4):437-48. doi: 10.1348/0144665042388982.
14. Arif AA, Korgaonkar P. The association of childhood asthma with mental health and developmental comorbidities in low-income families. J Asthma. 2016;53(3):277-81. doi: 10.3109/02770903.2015.1089277.
15. Feitosa CA, Santos DN, Barreto do Carmo MB, Santos LM, Teles CA, Rodrigues LC, Barreto ML. Behavior problems and prevalence of asthma symptoms among Brazilian children. J Psychosom Res. 2011 Sep;71(3):160-5. doi: 10.1016/j.jpsychores.2011.02.004.
16. Ortega AN, Huertas SE, Canino G, Ramirez R, Rubio-Stipec M. Childhood asthma, chronic illness, and psychiatric disorders. J Nerv Ment Dis. 2002 May;190(5):275-81. doi: 10.1097/00005053-200205000-00001.
17. Goodwin RD, Messineo K, Bregante A, Hoven CW, Kairam R. Prevalence of probable mental disorders among pediatric asthma patients in an inner-city clinic. J Asthma. 2005 Oct;42(8):643-7. doi: 10.1080/02770900500264770.
18. Kaugars AS, Klinnert MD, Bender BG. Family influences on pediatric asthma. J Pediatr Psychol. 2004 Oct;29(7):475-91. doi: 10.1093/jpepsy/jsh051. Erratum in: J Pediatr Psychol. 2005 Jan-Feb;30(1):123.
19. Swartz MK. Predictors of Health-Related Quality of Life in Asthmatic Children. J Asthma Allergy Educ. 2010 Jun;1(3):100–8.
20. Teach SJ, Crain EF, Quint DM, Hylan ML, Joseph JG. Indoor environmental exposures among children with asthma seen in an urban emergency department. Pediatrics. 2006 Apr;117(4 Pt 2):S152-8. doi: 10.1542/peds.2005-2000M.
21. Patel MR, Coffman JM, Tseng CW, Clark NM, Cabana MD. Physician communication regarding cost when prescribing asthma medication to children. Clin Pediatr (Phila). 2009 Jun;48(5):493-8. doi: 10.1177/0009922808330110.
22. Marin TJ, Chen E, Munch JA, Miller GE. Double-exposure to acute stress and chronic family stress is associated with immune changes in children with asthma.

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Psychosom Med. 2009 May;71(4):378-84. doi: 10.1097/PSY.0b013e318199dbc3.
23. Shojaei T, Wazana A, Pitrou I, Kovess V. The strengths and difficulties questionnaire: validation study in French school-aged children and cross-cultural comparisons. Soc Psychiatry Psychiatr Epidemiol. 2009 Sep;44(9):740-7. doi: 10.1007/s00127-008-0489-8.
24. Obel C, Heiervang E, Rodriguez A, Heyerdahl S, Smedje H, Sourander A, et al. The Strengths and Difficulties Questionnaire in the Nordic countries. Eur Child Adolesc Psychiatry [Internet]. 2004 Jul [cited 2022 Feb 24];13(S2). Available from: http://link.springer.com/10.1007/s00787-004-2006-2
25. Marzocchi GM, Capron C, Di Pietro M, Duran Tauleria E, Duyme M, Frigerio A, Gaspar MF, Hamilton H, Pithon G, Simões A, Thérond C. The use of the Strengths and Difficulties Questionnaire (SDQ) in Southern European countries. Eur Child Adolesc Psychiatry. 2004;13 Suppl 2:II40-6. doi: 10.1007/s00787-004-2007-1.
26. Haines MM, McMunn A, Nazroo JY, Kelly YJ. Social and demographic predictors of parental consultation for child psychological difficulties. J Public Health Med. 2002 Dec;24(4):276-84. doi: 10.1093/pubmed/24.4.276.
27. Erhart M, Weimann A, Bullinger M, Schulte-Markwort M, Ravens-Sieberer U. Psychische Komorbidität bei chronisch somatischen Erkrankungen im Kindes- und Jugendalter [Psychological comorbidity in children and adolescents with chronic somatic diseases]. Bundesgesundheitsblatt Gesundheitsforschung Gesundheitsschutz. 2011 Jan;54(1):66-74. German. doi: 10.1007/s00103-010-1190-0. [Article in German].
28. Giannakopoulos G, Tzavara C, Dimitrakaki C, Kolaitis G, Rotsika V, Tountas Y. The factor structure of the Strengths and Difficulties Questionnaire (SDQ) in Greek adolescents. Ann Gen Psychiatry. 2009 Aug 26;8:20. doi: 10.1186/1744-859X-8-20.
29. Bøe T, Øverland S, Lundervold AJ, Hysing M. Socioeconomic status and children‘s mental health: results from the Bergen Child Study. Soc Psychiatry Psychiatr Epidemiol. 2012 Oct;47(10):1557-66. doi: 10.1007/s00127-011-0462-9.
30. Heshmat R, Qorbani M, Ghoreshi B, Djalalinia S, Tabatabaie OR, Safiri S, Noroozi M, Motlagh ME, Ahadi Z, Asayesh H, Kelishadi R. Association of socioeconomic status with psychiatric problems and violent behaviours in a nationally representative sample of Iranian children and adolescents: the CASPIAN-IV study. BMJ Open. 2016 Aug 16;6(8):e011615. doi: 10.1136/bmjopen-2016-011615.