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A study to assess the risk factors of bronchial asthma in children below 10 years of age

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ABSTRACT

Children are profoundly powerless against the negative wellbeing resulting in numerous ecological exposures. Children get proportionately more significant portions of natural toxicants than grown-ups, and the way that their organs and tissues are quickly creating makes them especially vulnerable to synthetic abuse. Asthma is a constant fiery infection of the aviation routes at present influencing over 300 million individuals around the world. The risk factors of asthma include genetic predisposition, irresistible respiratory contamination, allergens, environment, workouts, medications, additives, and occupational stimuli. The descriptive research design was used with 100 samples, which matched Non- probability convenience sampling techniques selected the inclusion criteria. Demographic variables were collected by interview method followed by assessed the risk factors of bronchial asthma in children (below ten years of age) by using a self-structured questionnaire. Out of 100 samples, 50(50%) risk factor of heredity, 71(71%) have problems in taking asthma medications, 44(44%) only use zipped pillow covers, 34(34%) do not use gas stoves in the kitchen, 10(10%) have moisture in the walls, 6(6%) have cases of asthma emergencies, 56(56%) find helpless in dealing with an asthma child.

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INTRODUCTION

Children's wellbeing incorporates the investigation of conceivable ecological reasons for sicknesses and disorders in Children's and newborns. Children are profoundly powerless against the negative welfare, resulting in numerous environmental exposures. WHO estimates for about 1 in every 250 deaths in the World (Pearce *et al.*, 2007). In genetically susceptible children, such interactions can lead to the development of airway inflammation, atopy and bronchial hyper-responsiveness. An expected 300 million people globally are influenced by asthma (Heinrich, 2011). WHO evaluated that 15 million Disability Adjusted Life Years (DALYs) are lost, and more than 180 000 asthma-related deaths are accounted for around the world. It is evaluated that 80% of asthma deaths happen in low salary and centre pay nations. It is anticipated that by 2025 an extra 100 million people will have asthma (Lemanske and Busse, 2010).

Asthma is a chronic inflammatory disease of the airways currently affecting more than 300 million individuals around the world. It is likewise the most pervasive among childhood everywhere across the globe, highlighting the marked disparity in prevalence between developed and developing coun-

tries (Global Initiative for Asthma, 2019). Like other resistant intervened sicknesses, asthma pathogenesis has hereditary and natural parts. The genome-wide affiliation has yielded a few quality loci related with asthma; however, these don't clarify the most significant extent of asthma (Vonk and Boezen, 2006). Epidemiologic investigations has discovered various ecological exposures related with asthma that may better specify the sharp increase in asthma over the 30 years (Pedersen *et al.*, 2011; Masoli *et al.*, 2004; Anandan *et al.*, 2010).

Asthma is a chronic inflammatory disorder of the airways in which many cells and cellular elements play a role. The chronic inflammation is the causes an associated increase in airway hyper-responsiveness that leads to recurrent episodes of wheezing, breathlessness, chest tightness and coughing, particularly at night or early morning. These episodes are usually a result of widespread but variable airflow obstruction that is often reversible either spontaneously or with treatment (Marco *et al.*, 1991; Asher *et al.*, 1995). The symptoms include wheezing, chest tightness, breathlessness and sputum production. The risk factors of asthma include genetic predisposition, infectious-respiratory infection, allergens environment, exercise, drugs, preservatives, and occupational stimuli (Ciccone *et al.*, 1997).

An expected 6.3 million children under 15 years of age died in 2017, or 1 at regular intervals, for the most part from preventable causes, as per new mortality estimates released by WHO, UNICEF, the United Nations Population Division and the World Bank Group. By far most of these death's (5.4 million), happened in the initial five years of life, with infants representing around half, all-inclusive, half of all death's under five years old occurred in sub-Saharan Africa and another 30% in Southern Asia. In sub-Saharan Africa, 1 out of 13 kids died before their fifth birthday celebration. In high-salary nations, that number was 1 in 185 (Renzoni *et al.*, 1999). WHO propelled Standards for improving nature of care for children and young adolescents in health facilities, in Entebbe, Uganda, in a gathering by the Network for Improving Quality of Care for Maternal, Newborn and Child Health (Quality of Care Network) and WHO, in an organization with USAID, and facilitated by the Uganda Government. Wellbeing specialists from 12 nations, remembering all the nations for the Quality of Care Network, assembled to share how they are attempting to improve the nature of care for children and young adolescents, discuss about how they can weave these models in their current national projects, and what sort of help they will require to do so (Galassi *et al.*, 1994).

Objectives

1. To assess the risk factor of bronchial asthma in children (below ten years)
2. To identify risk factors associated with uncontrolled asthma symptoms in children

MATERIALS AND METHODS

The research approach adopted in the study was a quantitative approach by using descriptive research design. The formal permission was obtained from the Authority of Saveetha Medical College Hospital, Chennai. After getting approval, the sample was selected by using inclusion criteria. One hundred parents of children below ten years of age from pediatric OPD and pediatric ward were chosen by using a non-probability convenience sampling technique. After the sample selection, informed consent was obtained from each sample. After the general instruction, demographic variables were collected by interview method followed by assessing the risk factors of bronchial asthma in children (below ten years of age) by using a self-structured questionnaire. The data were analyzed using descriptive and inferential statistics.

RESULTS AND DISCUSSION

Out of 100 samples, 61% were females, 60% had secondary education, 53% were working as skilled labour, 51% had monthly income Rs.11000-15000. 81% had a history of asthma. Regarding the smoking habit of the caretaker, 29% of samples had cigarette smoking. Regarding cooking habit, 34% of samples cook with kerosene/solid fuel. Regarding residence, 68% live in a rural area. Table 1 showed that Risk factor of Heredity is 50(50%). 100(100%) does not have any regular health care provider for asthma. 77(77%) does not have any history of asthma medication intake. 71(71%) have problems in taking asthma medications. 44(44%) only use zipped pillow covers. 69(69%) do not use carpets on the floor. 66(66%) use gas stoves in the kitchen. 10(10%) have moisture in the walls, 7(7%) in the ceiling. 24(24%) have a cat as their pet, 23(23%) have a dog as their pet. 79(79%) of the caretaker do not smoke. 94(94%) does not have cases of asthma emergencies. 100(100%) no child have stress due to asthma. 56(56%) should not have any problems from taking asthma medicines. 56(56%) find helpless in dealing with asthma child. 73(73%) of the child will be free of asthma symptoms after treatment.

Table 1: Frequencyand percentage of risk factors of bronchial asthma in children (n=100)

Sl.No	Risk Factors of Bronchial Asthma	Frequency (N)	Percentage (%)
1.	Heredity		
	Yes	50	50
	No	50	50
2.	Any regular health care provider Who treats asthma?		
	Yes	0	0
	No	100	100
3.	History of asthma medicines intake		
	Yes	23	23
	No	77	77
4.	Problems in taking asthma medicines		
	Yes	29	29
	No	71	71
5.	Use of zipped pillow cover		
	Yes	44	44
	No	56	56
6.	Carpet (Rugs) in floors		
	Yes	31	31
	No	69	69
7.	Use of gas stove in kitchen		
	Yes	66	66
	No	34	34
8.	Moisture in the house on the		
	Ceiling	7	7
	Walls	10	10
	No where	83	83
9.	Pets		
	Dog	23	23
	Cat	24	24
	No	53	53
10.	Smoking habit of care taker		
	Yes	21	21
	No	79	79
11.	Any asthma emergencies		
	Yes	6	6
	No	94	94
12.	Is your child stressed lately		
	Not at all	100	100
	All of the time	0	0
13.	Child should not have any problems from taking asthma medicines		
	Agree	56	56
	Disagree	44	44
14.	Helpless in dealing asthma of child		
	Agree	56	56
	Disagree	44	44
15.	Child will be free of symptoms after treatment		
	Agree	73	73
	Disagree	27	27

The significant findings of the study were 50(50%) risk factor of heredity, 71(71%) have problems in taking asthma medications, 44(44%) only use zipped pillow covers, 34(34%) do not use gas stoves in the kitchen, 10(10%) have moisture in the walls, 6(6%) have cases of asthma emergencies, 56(56%) find helpless in dealing with asthma child. The current investigation is upheld by Murray *et al.* (2017), who directed an examination to survey the forestalling extreme Asthma Exacerbations in youngsters, a randomized preliminary of parasite impermeable bedcovers.

Bug sharpened youngsters with asthma (3-17 years) after crisis emergency clinic participation with an asthma fuel to get bug impermeable or control bed encasings. Over a 12 Month intercession period, the event of severe asthma intensifications was explored. Of 434 kids were taken as tests. Vermin impermeable encasings are successfully diminishing the number of sharpened bug youngsters with asthma going to the medical clinic with asthma; however, it is not the number requiring oral prednisolone. This straightforward measure may decrease asthma worsening in children.

The current investigation is likewise upheld by Vermeulen *et al.* (2018), who learned about the Food hypersensitivity is a significant hazard factor for youth asthma, independent of whether it settles. A sum of 5,276 12month-old newborn children was enrolled utilizing a populace based inspecting outline. Babies experienced skin prick test to egg, nut, and sesame and those with a noticeable skin prick test result had oral nourishment challenges.

At four years of age, nourishment challenges were rehashed to decide perseverance or goals of nourishment sensitivity. Transient nourishment sensitivity and diligent nourishment hypersensitivity were both related with an expanded danger of asthma. Asthma at four years is twice as normal in those with challenge-demonstrated nourishment sensitivity at age one, independent of whether the nourishment hypersensitivity accordingly settles. Youngsters with at least two nourishment hypersensitivities and those with concurrent dermatitis were right around multiple times as liable to create asthma contrasted and those with no nourishment allergies.

CONCLUSION

Asthma was a financial and social burden to both children and guardians. Hazard elements of asthma advancement may incorporate cesarean birth, personal history of sensitivity and associative and susceptible maladies. Selective breastfeeding in the initial half-year may be securing factors.

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Conflict of Interest

The authors declared that they have no conflict of interest for this study.

REFERENCES

Anandan, C., Nurmatov, U., van Schayck, O. C. P., Sheikh, A. 2010. Is the prevalence of asthma declining? Systematic review of epidemiological studies. *Allergy*, 65(2):152–167.

Asher, M. I., Keil, U., Anderson, H. R., Beasley, R., Crane, J., Martinez, F., Mitchell, E. A., Pearce, N., Sibbald, B., Stewart, A. W., Strachan, D., Weiland, S. K., Williams, H. C. 1995. International study of asthma and allergies in childhood (ISAAC): rationale and methods. *European Respiratory Journal*, 8(3):483–491.

Ciccone, G., *et al.* 1997. Asthma and respiratory symptoms in 6-7 yr old Italian children: gender, latitude, urbanization and socioeconomic factors. *The European Respiratory Journal*, 10(8):1780–1786.

Galassi, C., *et al.* 1994. Changes in Prevalence of Asthma and Allergies Among Children and Adolescents in Italy: 1994–2002 . *Pediatrics*, 117(1):34–42.

Global Initiative for Asthma 2019. Global Strategy for Asthma Diagnosis and Prevention. (Accessed on: 21 February 2020).

Heinrich, J. 2011. Influence of indoor factors in dwellings on the development of childhood asthma. *International Journal of Hygiene and Environmental Health*, 214(1):1–25.

Lemanske, R. F., Busse, W. W. 2010. Asthma: Clinical expression and molecular mechanisms. *Journal of Allergy and Clinical Immunology*, 125(2):S95–S102.

Marco, R. D., Cappa, V., Accordini, S., Rava, M., Antonicelli, L., Bortolami, O., Braggion, M., Bugiani, M., Casali, L., Cazzoletti, L., Cerveri, I., Fois, A. G., Girardi, P., Locatelli, F., Marcon, A., Marinoni, A., Panico, M. G., Pirina, P., Villani, S., Verlato, G. 1991. Trends in the prevalence of asthma and allergic

rhinitis in Italy between. *European Respiratory Journal*, 39(4):883–892.

Masoli, M., Fabian, D., Holt, S., and, R. B. 2004. The global burden of asthma: executive summary of the GINA Dissemination Committee Report. *Allergy*, 59(5):469–478.

Murray, C. S., Foden, P., Sumner, H., Shepley, E., Custovic, A., Simpson, A. 2017. Preventing Severe Asthma Exacerbations in Children. A Randomized Trial of Mite-Impermeable Bedcovers. *American Journal of Respiratory and Critical Care Medicine*, 196(2):150–158.

Pearce, N., Ait-Khaled, N., Beasley, R., Mallol, J., Keil, U., Mitchell, E., and, C. R. 2007. Worldwide trends in the prevalence of asthma symptoms: phase III of the International Study of Asthma and Allergies in Childhood (ISAAC). *Thorax*, 62(9):758–766.

Pedersen, S. E., Hurd, S. S., Lemanske, R. F., Becker, A., Zar, H. J., Sly, P. D., Soto-Quiroz, M., Wong, G., Bateman, E. D. 2011. Global strategy for the diagnosis and management of asthma in children 5 years and younger. *Pediatric Pulmonology*, 46(1):1–17.

Renzoni, E., Forastiere, F., Biggeri, A., Viegi, G., Bisanti, L., Chellini, E., Ciccone, G., Corbo, G., Galassi, C., Rusconi, F., Sestini, P., on behalf of the Sidria collaborative group 1999. Differences in parental- and self-report of asthma, rhinitis and eczema among Italian adolescents. *European Respiratory Journal*, 14(3):597–604.

Vermeulen, E. M., Koplin, J. J., Dharmage, S. C., Gurrin, L. C., Peters, R. L., McWilliam, V., Ponsonby, A.-L., Dwyer, T., Lowe, A. J., Tang, M. L., Allen, K. J., Wake, M., Matheson, M., Robertson, C., Hill, D. 2018. Food Allergy Is an Important Risk Factor for Childhood Asthma, Irrespective of Whether It Resolves. *The Journal of Allergy and Clinical Immunology: In Practice*, 6(4):1336–1341.

Vonk, J. M., Boezen, H. M. 2006. Predicting adult asthma in childhood. *Current Opinion in Pulmonary Medicine*, 12(1):42–47.