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Commentary

Asthma morbidity in Africa: Is it time to act to achieve asthma care for all?

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ABSTRACT

As we approach World Asthma Day on the May 2, 2023, we reflect on the theme " Asthma Care for All". Prevalence of Asthma is increasing amongst children, adolescents and adults. Under-diagnosis, underutilization of inhaled corticosteroids, inaccessibility of treatment, and unaffordability of medicines are amongst the challenges that low-middle income countries are faced with. This commentary seeks to highlight the challenges, the resources available and to suggest recommendations that can be implemented to improve asthma care for all and reduce burden of asthma in Africa.

Keywords: Asthma, Morbidity, Low-middle income countries, Asthma care, Africa

As we approach World Asthma Day on the May 2, 2023, we reflect on the theme this year "Asthma Care for All." Globally, around one in ten children and adolescents and one in fifteen adults have asthma symptoms.[1] The Global Asthma Network (GAN) recently reported data on the high burden of asthma in children, adolescents, and adults in several countries and the change in prevalence over time in children and adolescents.[2-4] An important finding in the GAN Phase 1 study was a significant reduction in current wheeze compared with the previous International Study of Asthma and Allergies in Childhood Phase III study, [Figure 1].[5] Approximately 50% of children and adolescents experience severe asthma symptoms in low-income and middle-income countries (LMICs).[2] LMICs bear a disproportionately high global morbidity and mortality burden caused by chronic respiratory diseases.[6] The problems of under-diagnosis and under-treatment of asthma are juxtaposed in these high burden settings and also contribute to poor quality of life.[5] The Indian questionnaire-based GAN study, that included 45971 children and adolescents and 81296 adults, showed that 82% of respondents with current wheezing and approximately 70% with severe asthma symptoms remained undiagnosed.[5]

The Global Initiative of Asthma (GINA) stresses the central role of asthma control to improve quality of life in people living with asthma.[7] The reasons for inadequate asthma control in underserved populations include poor access to effective controller medications, weak infrastructure of health services for the management of chronic diseases, poor adherence to therapy, lack of effective educational approaches, persistent exposure to risk factors, and social, cultural and language barriers.[8] A World Health Assembly Resolution on equitable access to affordable care, including inhaled medicines, for children, adolescents, and adults living with

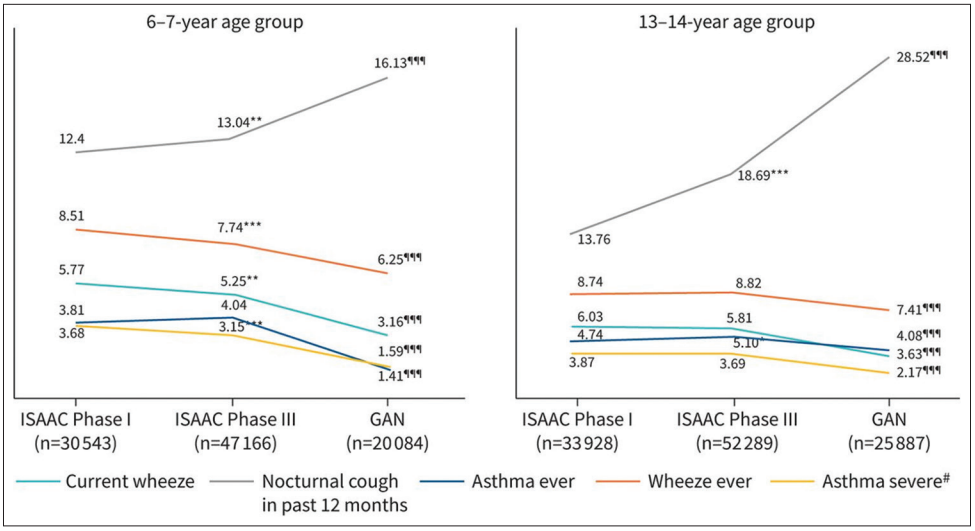

Figure 1: Time trends in various aspects of asthma including wheeze, wheeze ever, nocturnal cough, severe asthma, and asthma ever through the International Study of Asthma and Allergies in Childhood (ISAAC) Phase I and Phase III, and Global Asthma Network (GAN) Phase I, in the two age groups of children. #Severe asthma is defined as more than four attacks of wheezing in the previous 12 months or wheezing affecting sleep or speech in previous 12 months. *$P < 0.05$; **$P < 0.01$; ***$P < 0.001$ when ISAAC Phase I compared to ISAAC Phase II. ¶¶¶$P < 0.001$ when ISAAC Phase III compared to GAN Phase I. Reproduced with permission of the ERJ Open Research.

asthma, wherever they live in the world, would be a valuable step forward, as was achieved recently for diabetes and access to insulin.[9] This goal would truly ensure that there would be "Asthma care for all."The majority of children, adolescents, and adults with asthma can be treated effectively with inhaled therapies – particularly inhaled corticosteroids (ICS) – that achieve disease control, that is, a reduction in asthma symptoms, risk of exacerbations, and death. However, despite the substantial evidence that they are highly effective, most children, adolescents, and adults with asthma do not have access to available or affordable medicines. A recent systematic review showed that only six out of 58 LMICs countries met the WHO 80% availability target for short-acting β2 agonists (SABA), three out of 48 for ICS and none of four countries met 80% availability target for combination ICS/fast-acting long acting β2 agonist (ICS-LABA).[10] Availability and affordability of medicines and diagnostics for asthma remain a big challenge in LMICs.[11] Peak expiratory flow devices were available at best in just over half of studied outlets in South Africa (53.6%), whereas in Uganda (6.7%), Ghana (13%), and Nigeria (38 %) their availability was much lower. Availability of spirometry was even less with only 24.4% (Uganda) and 29.4% (Nigeria) of studied facilities having spirometry.[11] Poor availability and affordability of medicines and diagnostic tests recommended for the management of asthma and chronic obstructive pulmonary disease in Africa could be addressed through increasing awareness about the burden of both conditions and their optimal management among health-care practitioners, improving local manufacturing of good quality affordable generic medicines, updating national essential medicine list and treatment guidelines, improving drug supply chains and forecast, and sustained and equitable government financing in health budgets.[11]

The prevalence of underutilization of ICS is high and the contributing factors include increased cost of ICS, inaccessibility of treatment, poor knowledge of the patients on asthma disease and asthma treatment, myths around inhaled steroids, embarrassment about using inhalers in public, and lack of recently reviewed local guidelines for asthma treatment.[12,13] Some patients who are prescribed ICS and use them properly start noticing significant improvements in their symptoms and quality of life and then stop taking it perhaps not appreciating the need for ongoing treatment.[14] This may be due to lack of knowledge and understanding. Family-friendly educational programs can alleviate this problem.

For children under the age of 12 years, GINA recommends that ICS therapy be used with SABA as needed or regularly, that is, ICS regularly with as-needed SABA as an alternative approach.[15] A maintenance and reliever therapy (MART) approach to asthma treatment with ICS plus formoterol is effective in children as young as 4 years, prolonging time to first exacerbation, reducing exacerbation rates, and reducing asthma related morbidity when compared with chronic ICS therapy.[16] The regimen using combination of ICS-formoterol for both maintenance and as-needed symptom relief reduces the exacerbation rate compared with both ICS-

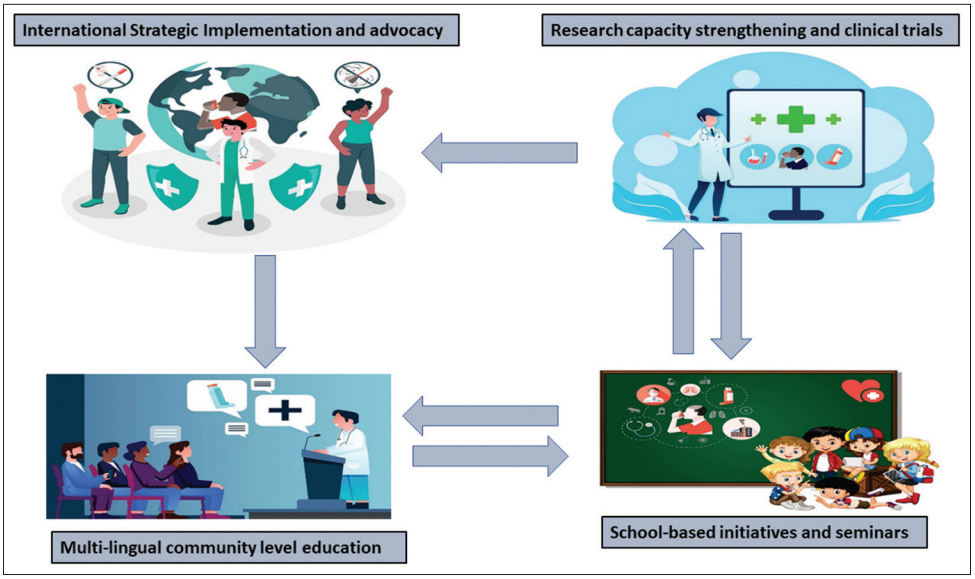

Figure 2: Recommendations for interventions for policy, research and community level participation to improve asthma care in Africa. Images edited from www.bluesugardesigns.co.za and Freepik.

LABA fixed-dose combination and higher chronic ICS use alone in children with asthma.[17,18] MART with a very-low-dose or low-dose ICS-formoterol combination is included in the list of preferred controllers at GINA step 3 from 6 years of age.[18] The MART approach is largely unavailable in Africa due to affordability of the ICS-formoterol. There is currently no health economics nor clinical trial data available from Africa to address the health economics arguments for this approach. There is an urgent need to generate this evidence to evaluate the feasibility of this approach to reduce the significant morbidity from asthma in Africa.

Looking ahead, implementation of national strategies to reduce the asthma burden is largely lacking in LMICs and very much needed.[19] Management of non-communicable diseases requires many strategies from several perspectives and on different levels, including at individual and country levels, [Figure 2].[20] There are available resources that could be adapted to the African setting from GAN and GINA.[1,7] This is a time to start looking at these strategies and resources for asthma care to be accessible for all who need it.

In conclusion, there is an urgent need to implement national asthma strategies in Africa to reduce the burden of asthma and the overall costs of treatment in these countries. Simple, family-friendly asthma education programs, and community engagement can potentially improve asthma morbidity and mortality. Research capacity strengthening is needed to help generate evidence on the most cost-effective strategies to manage asthma in Africa. To improve asthma outcomes, there needs to be higher levels of investment in the health sector, (e.g. from national health service budgets, individuals, insurance providers, and donors).

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Declaration of patient consent

Patient's consent not required as there are no patients in this study.

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Conflicts of interest

There are no conflicts of interest.

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