GEORGIAN MEDICAL NEWS

ISSN 1512-0112

NO 5 (374) Май 2026

ТБИЛИСИ - NEW YORK

ЕЖЕМЕСЯЧНЫЙ НАУЧНЫЙ ЖУРНАЛ

Медицинские новости Грузии

საქართველოს სამედიცინო სიახლენი

GEORGIAN MEDICAL NEWS

Monthly Georgia-US joint scientific journal published both in electronic and paper formats of the Agency of Medical Information of the Georgian Association of Business Press. Published since 1994. Distributed in NIS, EU and USA.

GMN: Georgian Medical News is peer-reviewed, published monthly journal committed to promoting the science and art of medicine and the betterment of public health, published by the GMN Editorial Board since 1994. GMN carries original scientific articles on medicine, biology and pharmacy, which are of experimental, theoretical and practical character; publishes original research, reviews, commentaries, editorials, essays, medical news, and correspondence in English and Russian.

GMN is indexed in MEDLINE, SCOPUS, PubMed and VINITI Russian Academy of Sciences. The full text content is available through EBSCO databases.

GMN: Медицинские новости Грузии - ежемесячный рецензируемый научный журнал, издаётся Редакционной коллегией с 1994 года на русском и английском языках в целях поддержки медицинской науки и улучшения здравоохранения. В журнале публикуются оригинальные научные статьи в области медицины, биологии и фармации, статьи обзорного характера, научные сообщения, новости медицины и здравоохранения. Журнал индексируется в MEDLINE, отражён в базе данных SCOPUS, PubMed и ВИНИТИ РАН. Полнотекстовые статьи журнала доступны через БД EBSCO.

GMN: Georgian Medical News – საქართველოს სამედიცინო სიახლენი – არის ყოველთვიური სამეცნიერო სამედიცინო რეცენზირებადი ჟურნალი, გამოიცემა 1994 წლიდან, წარმოადგენს სარედაქციო კოლეგიისა და აშშ-ის მეცნიერების, განათლების, ინდუსტრიის, ხელოვნებისა და ბუნებისმეტყველების საერთაშორისო აკადემიის ერთობლივ გამოცემას. GMN-ში რუსულ და ინგლისურ ენებზე ქვეყნდება ექსპერიმენტული, თეორიული და პრაქტიკული ხასიათის ორიგინალური სამეცნიერო სტატიები მედიცინის, ბიოლოგიისა და ფარმაციის სფეროში, მიმოხილვითი ხასიათის სტატიები.

ჟურნალი ინდექსირებულია MEDLINE-ის საერთაშორისო სისტემაში, ასახულია SCOPUS-ის, PubMed-ის და ВИНИТИ РАН-ის მონაცემთა ბაზებში. სტატიების სრული ტექსტი ხელმისაწვდომია EBSCO-ს მონაცემთა ბაზებიდან.

WEBSITE

www.geomednews.com

К СВЕДЕНИЮ АВТОРОВ!

При направлении статьи в редакцию необходимо соблюдать следующие правила:

1. Статья должна быть представлена в двух экземплярах, на русском или английском языках, напечатанная через **полтора интервала на одной стороне стандартного листа с шириной левого поля в три сантиметра**. Используемый компьютерный шрифт для текста на русском и английском языках - **Times New Roman** (**Кириллица**), для текста на грузинском языке следует использовать **AcadNusx.** Размер шрифта - **12**. К рукописи, напечатанной на компьютере, должен быть приложен CD со статьей.

2. Размер статьи должен быть не менее десяти и не более двадцати страниц машинописи, включая указатель литературы и резюме на английском, русском и грузинском языках.

3. В статье должны быть освещены актуальность данного материала, методы и результаты исследования и их обсуждение.

При представлении в печать научных экспериментальных работ авторы должны указывать вид и количество экспериментальных животных, применявшиеся методы обезболивания и усыпления (в ходе острых опытов).

4. К статье должны быть приложены краткое (на полстраницы) резюме на английском, русском и грузинском языках (включающее следующие разделы: цель исследования, материал и методы, результаты и заключение) и список ключевых слов (key words).

5. Таблицы необходимо представлять в печатной форме. Фотокопии не принимаются. **Все цифровые, итоговые и процентные данные в таблицах должны соответствовать таковым в тексте статьи**. Таблицы и графики должны быть озаглавлены.

6. Фотографии должны быть контрастными, фотокопии с рентгенограмм - в позитивном изображении. Рисунки, чертежи и диаграммы следует озаглавить, пронумеровать и вставить в соответствующее место текста **в tiff формате**.

В подписях к микрофотографиям следует указывать степень увеличения через окуляр или объектив и метод окраски или импрегнации срезов.

7. Фамилии отечественных авторов приводятся в оригинальной транскрипции.

8. При оформлении и направлении статей в журнал МНГ просим авторов соблюдать правила, изложенные в «Единых требованиях к рукописям, представляемым в биомедицинские журналы», принятых Международным комитетом редакторов медицинских журналов - http://www.spinesurgery.ru/files/publish.pdf и http://www.nlm.nih.gov/bsd/uniform_requirements.html
В конце каждой оригинальной статьи приводится библиографический список. В список литературы включаются все материалы, на которые имеются ссылки в тексте. Список составляется в алфавитном порядке и нумеруется. Литературный источник приводится на языке оригинала. В списке литературы сначала приводятся работы, написанные знаками грузинского алфавита, затем кириллицей и латиницей. Ссылки на цитируемые работы в тексте статьи даются в квадратных скобках в виде номера, соответствующего номеру данной работы в списке литературы. Большинство цитированных источников должны быть за последние 5-7 лет.

9. Для получения права на публикацию статья должна иметь от руководителя работы или учреждения визу и сопроводительное отношение, написанные или напечатанные на бланке и заверенные подписью и печатью.

10. В конце статьи должны быть подписи всех авторов, полностью приведены их фамилии, имена и отчества, указаны служебный и домашний номера телефонов и адреса или иные координаты. Количество авторов (соавторов) не должно превышать пяти человек.

11. Редакция оставляет за собой право сокращать и исправлять статьи. Корректура авторам не высылается, вся работа и сверка проводится по авторскому оригиналу.

12. Недопустимо направление в редакцию работ, представленных к печати в иных издательствах или опубликованных в других изданиях.

При нарушении указанных правил статьи не рассматриваются.

REQUIREMENTS

Please note, materials submitted to the Editorial Office Staff are supposed to meet the following requirements:

1. Articles must be provided with a double copy, in English or Russian languages and typed or compu-ter-printed on a single side of standard typing paper, with the left margin of **3** centimeters width, and **1.5** spacing between the lines, typeface - **Times New Roman** (**Cyrillic**), print size - **12** (referring to Georgian and Russian materials). With computer-printed texts please enclose a CD carrying the same file titled with Latin symbols.

2. Size of the article, including index and resume in English, Russian and Georgian languages must be at least 10 pages and not exceed the limit of 20 pages of typed or computer-printed text.

3. Submitted material must include a coverage of a topical subject, research methods, results, and review.

Authors of the scientific-research works must indicate the number of experimental biological species drawn in, list the employed methods of anesthetization and soporific means used during acute tests.

4. Articles must have a short (half page) abstract in English, Russian and Georgian (including the following sections: aim of study, material and methods, results and conclusions) and a list of key words.

5. Tables must be presented in an original typed or computer-printed form, instead of a photocopied version. **Numbers, totals, percentile data on the tables must coincide with those in the texts of the articles.** Tables and graphs must be headed.

6. Photographs are required to be contrasted and must be submitted with doubles. Please number each photograph with a pencil on its back, indicate author's name, title of the article (short version), and mark out its top and bottom parts. Drawings must be accurate, drafts and diagrams drawn in Indian ink (or black ink). Photocopies of the X-ray photographs must be presented in a positive image in **tiff format**.

Accurately numbered subtitles for each illustration must be listed on a separate sheet of paper. In the subtitles for the microphotographs please indicate the ocular and objective lens magnification power, method of coloring or impregnation of the microscopic sections (preparations).

7. Please indicate last names, first and middle initials of the native authors, present names and initials of the foreign authors in the transcription of the original language, enclose in parenthesis corresponding number under which the author is listed in the reference materials.

8. Please follow guidance offered to authors by The International Committee of Medical Journal Editors guidance in its Uniform Requirements for Manuscripts Submitted to Biomedical Journals publication available online at: http://www.nlm.nih.gov/bsd/uniform_requirements.html
http://www.icmje.org/urm_full.pdf
In GMN style for each work cited in the text, a bibliographic reference is given, and this is located at the end of the article under the title "References". All references cited in the text must be listed. The list of references should be arranged alphabetically and then numbered. References are numbered in the text [numbers in square brackets] and in the reference list and numbers are repeated throughout the text as needed. The bibliographic description is given in the language of publication (citations in Georgian script are followed by Cyrillic and Latin).

9. To obtain the rights of publication articles must be accompanied by a visa from the project instructor or the establishment, where the work has been performed, and a reference letter, both written or typed on a special signed form, certified by a stamp or a seal.

10. Articles must be signed by all of the authors at the end, and they must be provided with a list of full names, office and home phone numbers and addresses or other non-office locations where the authors could be reached. The number of the authors (co-authors) must not exceed the limit of 5 people.

11. Editorial Staff reserves the rights to cut down in size and correct the articles. Proof-sheets are not sent out to the authors. The entire editorial and collation work is performed according to the author's original text.

12. Sending in the works that have already been assigned to the press by other Editorial Staffs or have been printed by other publishers is not permissible.

Articles that Fail to Meet the Aforementioned Requirements are not Assigned to be Reviewed.

ავტორთა საყურადღებოდ!

რედაქციაში სტატიის წარმოდგენისას საჭიროა დავიცვათ შემდეგი წესები:

1. სტატია უნდა წარმოადგინოთ 2 ცალად, რუსულ ან ინგლისურ ენებზე,დაბეჭდილი სტანდარტული ფურცლის 1 გვერდზე, 3 სმ სიგანის მარცხენა ველისა და სტრიქონებს შორის 1,5 ინტერვალის დაცვით. გამოყენებული კომპიუტერული შრიფტი რუსულ და ინგლისურენოვან ტექსტებში - **Times New Roman (Кириллица)**, ხოლო ქართულენოვან ტექსტში საჭიროა გამოვიყენოთ **AcadNusx.** შრიფტის ზომა – 12. სტატიას თან უნდა ახლდეს CD სტატიით.

2. სტატიის მოცულობა არ უნდა შეადგენდეს 10 გვერდზე ნაკლებს და 20 გვერდზე მეტს ლიტერატურის სიის და რეზიუმეების (ინგლისურ, რუსულ და ქართულ ენებზე) ჩათვლით.

3. სტატიაში საჭიროა გაშუქდეს: საკითხის აქტუალობა; კვლევის მიზანი; საკვლევი მასალა და გამოყენებული მეთოდები; მიღებული შედეგები და მათი განსჯა. ექსპერიმენტული ხასიათის სტატიების წარმოდგენისას ავტორებმა უნდა მიუთითონ საექსპერიმენტო ცხოველების სახეობა და რაოდენობა; გაუტკივარებისა და დაძინების მეთოდები (მწვავე ცდების პირობებში).

4. სტატიას თან უნდა ახლდეს რეზიუმე ინგლისურ, რუსულ და ქართულ ენებზე არანაკლებ ნახევარი გვერდის მოცულობისა (სათაურის, ავტორების, დაწესებულების მითითებით და უნდა შეიცავდეს შემდეგ განყოფილებებს: მიზანი, მასალა და მეთოდები, შედეგები და დასკვნები; ტექსტუალური ნაწილი არ უნდა იყოს 15 სტრიქონზე ნაკლები) და საკვანძო სიტყვების ჩამონათვალი (key words).

5. ცხრილები საჭიროა წარმოადგინოთ ნაბეჭდი სახით. ყველა ციფრული, შემაჯამებელი და პროცენტული მონაცემები უნდა შეესაბამებოდეს ტექსტში მოყვანილს.

6. ფოტოსურათები უნდა იყოს კონტრასტული; სურათები, ნახაზები, დიაგრამები - დასათაურებული, დანომრილი და სათანადო ადგილას ჩასმული. რენტგენოგრამების ფოტოასლები წარმოადგინეთ პოზიტიური გამოსახულებით **tiff** ფორმატში. მიკროფოტოსურათების წარწერებში საჭიროა მიუთითოთ ოკულარის ან ობიექტივის საშუალებით გადიდების ხარისხი, ანათალების შეღებვის ან იმპრეგნაციის მეთოდი და აღნიშნოთ სურათის ზედა და ქვედა ნაწილები.

7. სამამულო ავტორების გვარები სტატიაში აღინიშნება ინიციალების თანდართვით, უცხოურისა – უცხოური ტრანსკრიპციით.

8. სტატიას თან უნდა ახლდეს ავტორის მიერ გამოყენებული სამამულო და უცხოური შრომების ბიბლიოგრაფიული სია (ბოლო 5-8 წლის სიღრმით). ანბანური წყობით წარმოდგენილ ბიბლიოგრაფიულ სიაში მიუთითეთ ჯერ სამამულო, შემდეგ უცხოელი ავტორები (გვარი, ინიციალები, სტატიის სათაური, ჟურნალის დასახელება, გამოცემის ადგილი, წელი, ჟურნალის №, პირველი და ბოლო გვერდები). მონოგრაფიის შემთხვევაში მიუთითეთ გამოცემის წელი, ადგილი და გვერდების საერთო რაოდენობა. ტექსტში კვადრატულ ფჩხილებში უნდა მიუთითოთ ავტორის შესაბამისი N ლიტერატურის სიის მიხედვით. მიზანშეწონილია, რომ ციტირებული წყაროების უმეტესი ნაწილი იყოს 5-6 წლის სიღრმის.

9. სტატიას თან უნდა ახლდეს: ა) დაწესებულების ან სამეცნიერო ხელმძღვანელის წარდგინება, დამოწმებული ხელმოწერითა და ბეჭდით; ბ) დარგის სპეციალისტის დამოწმებული რეცენზია, რომელშიც მითითებული იქნება საკითხის აქტუალობა, მასალის საკმაობა, მეთოდის სანდოობა, შედეგების სამეცნიერო-პრაქტიკული მნიშვნელობა.

10. სტატიის ბოლოს საჭიროა ყველა ავტორის ხელმოწერა, რომელთა რაოდენობა არ უნდა აღემატებოდეს 5-ს.

11. რედაქცია იტოვებს უფლებას შეასწოროს სტატია. ტექსტზე მუშაობა და შეჯერება ხდება საავტორო ორიგინალის მიხედვით.

12. დაუშვებელია რედაქციაში ისეთი სტატიის წარდგენა, რომელიც დასაბეჭდად წარდგენილი იყო სხვა რედაქციაში ან გამოქვეყნებული იყო სხვა გამოცემებში.

აღნიშნული წესების დარღვევის შემთხვევაში სტატიები არ განიხილება.

GEORGIAN MEDICAL NEWS
NO 5 (374) 2026

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INVESTIGATING THE PERSPECTIVES OF RESPIRATORY PHYSICIANS ON HOW SOCIAL DETERMINANTS OF HEALTH AND HEALTH LITERACY INFLUENCE ASTHMA OUTCOMES: A QUALITATIVE STUDY

Sultan M. Siham[1], Ali L. Jasim[1], Amar K. Almajidy[2].

[1]Department of Clinical Pharmacy, College of Pharmacy, University of Baghdad, Baghdad, Iraq.
[2]College of Medicine, University of Baghdad, Baghdad, Iraq.

Abstract.

Background: The present study sought to understand the role of social determinants on asthma outcomes through the perspectives of Iraqi respiratory physicians.

Methods: A qualitative study design with an interview guide was used to conduct semi-structured, in-depth interviews with respiratory physicians purposively selected from different tertiary healthcare centres (Baghdad, Iraq). Data was collected during a predefined study period and analysed through thematic analysis. Interviews were audio-recorded and transcribed verbatim, then iteratively coded to identify key themes and subthemes describing the perceived influence of social determinants of health (SDOH) and health literacy on asthma control, treatment adherence, and healthcare utilization.

Results: Seventeen respiratory physicians were interviewed. Thematic analysis revealed several interconnecting themes, such as socioeconomic barriers, environmental and occupational exposures, access to health care, and health literacy, which contribute to asthma control. Interviews with physicians identified several factors, including medication affordability, non-adherence to follow-up or doctors' recommendations, poor inhaler technique, and late presentation, as important factors explaining the suboptimum asthma outcome linked to disease progression and more frequent exacerbation.

Conclusion: Impacts of social determinants of health on asthma outcomes from the insights of Iraqi respiratory physicians. To achieve optimal asthma control, socioeconomic inequalities must be addressed, and diversified efforts should focus on enhancing patient education and increasing healthcare accessibility.

Key words. Asthma outcomes, social determinants, health literacy, qualitative research.

Introduction.

Asthma is more than a disease; it is a chronic inflammatory airway condition that affects more than 300 million people around the globe and continues to serve as one of the leading causes of morbidity, healthcare utilisation, and diminished quality of life throughout the world [1]. Although therapeutic management has improved, important differences in asthma control and outcome are still documented between populations. There is accumulating evidence that these disparities are largely mediated by social determinants of health (SDOH), such as socioeconomic status, level of education, housing quality, environmental exposures and access to healthcare services [2]. The World Health Organisation defines SDOH as the circumstances in which people are born, grow, live, work, and age and the wider set of forces shaping the conditions of daily life [3].

In exacerbating asthma, negative SDOH like poverty, crowded housing arrangements, exposure to pollutants, and limited access to healthcare facilities have been linked with higher rates of symptom control as well as hospitalisation [4,5]. Additionally, cumulative social disadvantage has been associated with a higher prevalence and severity of asthma in low to moderate-income countries compared to high-income countries, where the environment is less regulated, and healthcare access is not readily available [6,7].

Asthma is a significant public health issue in Iraq. Prevalence rates are noteworthy in recent epidemiological studies, and sociodemographic factors as well as environmental exposures have been reported to add burden [8, 9]. Gaining some insight into structural barriers and issues at the patient level that impact asthma control from physicians' lived experiences is important. Thus, the aim of this qualitative study was to explore Iraqi respiratory physicians' perspectives regarding SDOH and its potential effect on asthma outcomes.

Patients and Methods.

Study design: A qualitative phenomenological design was used to explore physicians' experiences and perceptions, selected in order to reflect lived realities in a resource-constrained, conflict-affected context.

Inclusion criteria: A licensed physician qualified in respiratory medicine who agreed to participate in the study was recruited from healthcare providers for this study.

Exclusion criteria: Physicians who refused to participate in the study or those with specialities other than respiratory medicine.

Data collection:

Data were obtained through face-to-face interviews with physicians, using a semi-structured interview guide. guide covering eleven core questions.

Thematic analysis:

Interviews were transcribed and analysed manually using Braun and Clarke's six-phase approach. Intercoder agreement, use of a coding framework, and resolution of disagreements through discussion ensured coding reliability [10].

Ethical Approval:

Ethical approval was obtained from the University of Baghdad College of Pharmacy and the Iraqi Ministry of Health Ethical Committee (RECAUBCP12102625R in 12/10/2025). All participants provided consent and agreement to participate in the present study.

Results.

Seventeen respiratory physicians were interviewed, 13 males and 4 females. The number of years since graduation varied widely from 10 to 42 years, and the speciality experience ranged from 2 to 37 years working in four health centres (Baghdad, Iraq)

Thematic Analysis: From the collected thematic analysis, arranged into six major themes, including environmental and housing factors, economic situations, health access, psychosocial contextual conditions, health literacy, and documentation barriers.

Theme 1: Environmental and housing conditions.

Physicians always articulated those environmental exposures, especially air pollution and housing quality, were greatly important in asthma outcomes. Hazardous housing conditions, including risk factors like mould, indoor pets or excessive use of detergents, were repeatedly associated with uncontrolled asthma and exacerbations. Clinicians commented that, although lifestyle and housing changes are frequently prescribed, common barriers impede their implementation. Such barriers include patients being hesitant to alter long-standing behaviours, and, more significantly, economic limitations that restrict people's ability to make living changes. Particularly noteworthy were the challenges of poverty as a barrier to care, trapping many patients in settings that maintain poor asthma control (Figure 1).

Clinicians highlighted housing quality as a critical yet often overlooked factor in asthma management. One participant (Participant 5) noted that poor housing quality directly contributed to resistant asthma and poor control. Echoing this concern, another physician (Participant 3) emphasized that housing conditions are very important, pointing out that some patients use detergents that can increase asthma attacks. Together, these observations underscore the powerful environmental predictors of asthma control. However, not all encounters yielded straightforward disclosure: Participant 2 described an attempt to ask patients about their housing conditions, only to be met with refusal to answer, adding, "I notice no improvement." This abrupt refusal and lack of observed progress highlight a potential barrier in clinical communication and patient engagement.

Theme 2: Financial Situation and Insurance Status (Economic Constraints versus Access to Healthcare).

Socioeconomic status was identified as an important factor in the compliance with the treatment of asthma. Financial constraints influencing patients' access to effective medications were consistently emphasised by physicians. A sharp divide emerged between richer patients, who could pay for higher-end inhalers, and low-income ones who frequently had to use less expensive options or simply didn't take one at all. Insurance coverage was often noted as limited or nonexistent, providing little respite from the cost of care. To overcome these barriers, clinicians said they depended on free samples or referral to specialised public centres. The stark divide in access was illustrated by Participant 1, who emphasized that 'low-income patients use cheap drugs, and rich patients use expensive inhalers'. This financial constraint directly limits treatment choices, as Participant 5 further stated that because 'insurance is limited... with low-income patients, inhaler access is difficult'. Consequently, these observations highlight structural disparities in healthcare access and the powerful influence of economic limitations on routine asthma management.

Theme 3: Psychosocial Factors.

Psychosocial Factors were consistently identified as being closely linked to asthma control. Physicians said emotional stress has a powerful negative effect on disease outcomes. It can worsen symptoms and interfere with management. As participant 1 noted, Stress was very affected, causing a negative impact. Low health literacy was also described as a barrier, with many patients unable to follow inhaler technique or understand the chronicity of asthma, resulting in poor adherence despite access to medications.

Social support was characterised as a protective factor that has the potential to buffer disease burden and enhance patients' health care experiences. Participant 13 noted, for instance, that a social support network resulted in changes in their asthmatic patients. However, clinicians recognised that social support is not routinely assessed in practice, partly due to time limitations in clinical settings. The profound impact of emotional triggers was encapsulated by Participant 1, who stated that 'stress is very affected, causing negative control' over the disease. Ultimately, these combined insights underscore the critical importance of stress management, structured patient education, and robust social support systems in achieving comprehensive asthma comorbidity control.

Theme 4: Health Literacy and Patient Education.

Health literacy was repeatedly identified as being related to adherence and outcomes. Physicians noted that patients who did not understand their condition well mismanaged their treatment. Participant 2 reported: Poor health literacy led to poor control, even when medication could be purchased by patients. On the other hand, high literacy was associated with good technique and compliance. The participant 4 stated that the majority of patients are low-literate, and they find it difficult to adhere to recommendations.

Theme 5: Documentation and Barriers.

Most physicians acknowledged that social needs were not consistently documented, commonly citing time limitations. Participant 10 said: I don't collect data on social needs from patients because I don't have any extra time to do that. Participant 4 commented that: It is time-consuming in the clinic. This is indicative of structural barriers to the routine incorporation of social determinants into care.

Theme 6: Coping Strategies and Referrals.

Clinicians reported concrete strategies such as offering free samples, referring patients to allergy centres, or suggesting environmental changes. As participant 3 described, I sent patients to the public clinic of the allergy centre to receive free inhalers and gave free samples in a private clinic. Participant 1 wrote: Give them a free sample, send to the allergy centre. These are reactive measures that cover up until gaps in the system are closed.

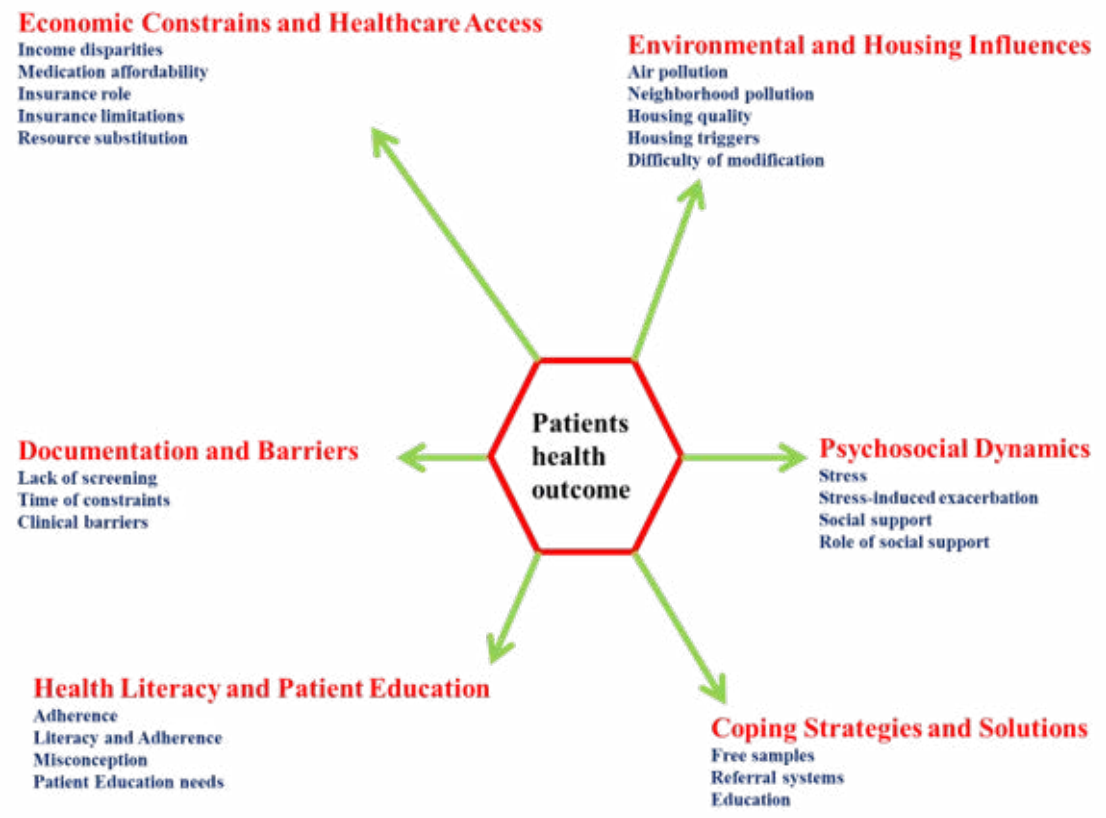

Figure 1. *Determinant factors influencing the health outcome of asthmatic patients.*

Table 1. *Characteristics of the participating physicians.*

Participant ID	Sex	Age (years)	Years of Speciality Experience
1	Male	34	2
2	Female	34	4
3	Male	55	21
4	Male	42	3
5	Female	36	3
6	Male	63	15
7	Male	59	6
8	Male	52	18
9	Male	63	32
10	Male	54	12
11	Male	52	16
12	Male	40	12
13	Male	61	27
14	Female	52	16
15	Male	56	23
16	Male	42	4
17	Male	42	5
Total	3F/14M	49±10	11.71±7.82

Discussion.

This qualitative study presents the views of Iraqi respiratory physicians on how SDOH affect asthma outcomes, providing further evidence, consistent with worldwide findings [6-9], that asthma control is determined not just by pharmacological treatment but also by environmental exposures, socioeconomic inequities, psychosocial stressors, health literacy and coping strategies. These insights highlight a need for integrated strategies that address structural and contextual challenges beyond medical care [11]. Environmental and housing factors were continuously mentioned as key determinants of asthma control. Mould, detergents, and overcrowded housing worsen exacerbations when patients are still living. Recent reviews also confirmed that housing quality and indoor environmental exposures are strong determinants of asthma morbidity, especially in children and vulnerable populations [12,13]. This indicates that environmental regulation and housing policy reforms, in addition to clinical interventions, are warranted in

Iraq. Environmental constraints were another recurring theme. Doctors noticed a wide gap between affluent patients who could buy top-of-the-line inhalers and low-income residents who used discount versions. This inequity corresponds with global data showing that medication expense and insurance coverage are key mediators of asthma control [14,15]. Limited availability of insurance coverage in Iraq creates inequalities that reflect systemic shortcomings in the financing of health care. Action plans required to tackle drug price reforms, more insurance, and access to essential therapies are among the solutions.

Psychosocial dynamics were also emphasised. Stress was ubiquitously mentioned as a trigger for exacerbations, while social support networks were viewed as protective. These results are consistent with recent evidence connecting psychosocial stressors to increased asthma morbidity via inflammatory mechanisms [16-18]. But physicians admit that social support is seldom assessed in clinical practice, due to time pressures, which represents a lost opportunity for holistic care. Incorporating psychosocial screening into standard management of asthma may improve outcomes. Another key determinant was health literacy. Doctors observed that even when drugs were available, close to a fifth of their patients mismanaged treatment because of a poor understanding of inhaler techniques or a misunderstanding about the medication. Systematic reviews support that low health literacy is a key driver of poor adherence and poorer asthma outcomes, while targeted education interventions reliably improve control [19]. Novel approaches, such as the use of social media and community-based education, can be especially applicable in resource-constrained settings [20,21].

Documentation and structural barriers were common threads. Because of the time pressure physicians thought they were under, social needs tend to go undocumented — echoing a wider challenge that SDOH will have to be integrated into clinical workflows. International literature highlights the importance of standardised screening tools and institutional support to implement effective social determinants capture across healthcare [22]. Coping strategies, including freemium pricing, public clinic referrals, and patient education, were presented as adaptive responses to systemic inequities [23]. This evidence supports recent findings that community-based interventions, no-cost medication programs, and referral systems can reduce disparities in asthma management without obviating the need for basic structural reform [24]. Long-term improvements will require action at the policy level, including enhanced insurance coverage, regulation of environmental determinants and structured linkages to social supports as part of the asthma pathways. Moreover, this study provides context-specific evidence amongst Iraqi physicians to the existing global literature of SDOH in asthma. In summary, in an integrated manner, addressing environmental exposures, economic barriers and psychosocial stressors as well as improving health literacy and coping strategies is essential for better control of disease in Iraq and similar LMIC settings.

The study population size of 17 physicians was relatively small, limiting the generalizability of the results. Although qualitative interviews yield detailed information, they are subjective and cannot demonstrate causality or measure the degree to which social determinants influence asthma outcomes. Another limitation of the study was that it did not account for patients' lived experiences, which may help their understanding of barriers at a community level. There is also a limited geographic scope, in that the study was conducted under a conflict-affected and resource-constrained setting in Iraq, so the results may not be directly generalizable elsewhere. Moreover, physicians indicated that social needs were rarely documented, so data depended heavily on recall and perception, which could easily introduce reporting bias. Lastly, time and resource limitations in clinical practice restricted the depth of assessment of social determinants, mirroring broader barriers facing healthcare systems to integrate such factors into routine care. Together, these limitations suggest that while the current study is informative, future work should leverage larger and more diverse samples, incorporate patient perspectives, and use mixed-methods approaches to bolster the evidence base.

Conclusion.

Our study shows that asthma outcomes in Iraq are significantly affected by SDOH beyond pharmacology. Environmental exposures, poor housing conditions, financial hardship, psychosocial stress and low health literacy emerged as key barriers to effective disease control from physicians' perspectives. The integration of SDOH into routine care is additionally burdened by structural challenges like minimal documentation of social needs and time constraints in the context of clinical practice. Despite challenges, physicians used strategies to cope—including providing free samples of medications, referring patients to public clinics, and utilising social media for education. Although these adaptive measures offer short-term relief, they cannot replace systemic reforms. Effective sustainable change demands multi-tiered interventions across various sectors to improve insurance coverage, affordable access to essential therapies, environmental regulation and housing, as well as psychosocial and educational support integrated into asthma care pathways. This study adds context-specific evidence on asthma and SDOH in Iraq to the literature worldwide. It highlights the pressing need for policies to tackle both medical and social aspects of care, promoting equitable outcomes and an enhanced quality of life among patients with asthma in resource-limited settings.

Acknowledgements: The authors would like to acknowledge the College of Pharmacy at the University of Baghdad, as well as the respiratory centre in Baghdad medical city, for their continuous support and provision of facilities to carry out this work.

Conflict of Interest: The authors declare no conflict of interest.

Financial Support: This research did not receive any specific grant from funding agencies in the public, commercial, or non-profit sectors.

Ethics and RCT code: The study was approved by the University of Baghdad- College of Pharmacy Research Ethics Committee (application number RECAUBCP12102625R).

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