

Asbestos in Central Asian Countries: Exposure Assessment and Health Consequences: A review

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SUPPLEMENTARY MATERIAL

Table S1. Searching keywords and strings in international repositories.

| Search string or keywords | Asbestos use and asbestos-related diseases in CA and | Database(s) |
|---------------------------|--|---|
| Keywords | “Asbestos”; “Chrysotile”; “Asbestosis OR asbestos-related diseases OR Mesothelioma”; “Asbestos AND Kyrgyzstan”; “Asbestos AND Uzbekistan”; “Asbestos AND Tajikistan”; “Asbestos AND Turkmenistan”; “Asbestos AND Kazakhstan”; and “Asbestos AND Central Asia” | PubMed, Google Scholar, Web of Science, Scopus and Elibrary.ru (in Russian) |

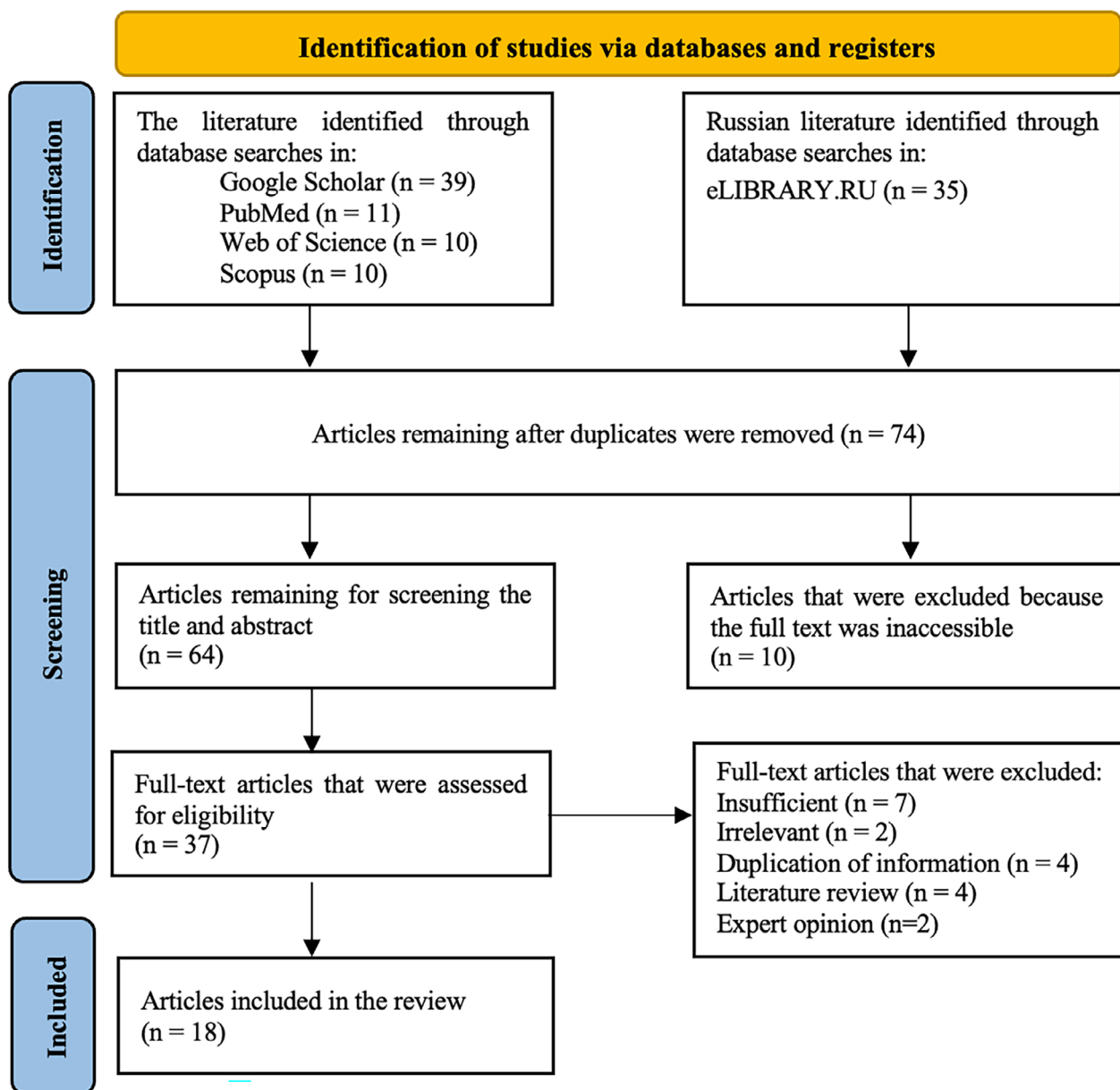


Figure S1. The inclusion and exclusion criteria for published articles on asbestos and asbestos-related diseases in CA Countries.

Table S2. Summarized details of the selected articles.

| # | Authors | Language | Method | Sample | Sample size | Dust pollution at the workplace | Human data (stat data) | Biological samples from human and clinical examination | Studies on lab animals | Non-malignant ARDs -pneumoconiosis, pleural plaques | Asbestos-related Mesothelioma (ARM) | Asbestos-related Lung cancer (ARL) |
|----|--|----------|---|----------------------------------|------------------|---------------------------------|------------------------|--|------------------------|---|-------------------------------------|------------------------------------|
| 1. | Altybekov et al., (2018) Kazakhstan, [33] | Russian | analysis of the incidence of mesothelioma in the country for 2012-2016, survey | statistical data, questionnaires | 257 human's data | no | yes | no | no | no | yes | no |
| 2. | Ibraev et al., (2016) Kazakhstan, [20] | Russian | The longitudinal study (every year for 7 years, the same group of workers were examined) | blood | 85 humans | no | no | yes | no | no | no | no |
| 3. | Koigeldinova et al., (2015) Kazakhstan, [21] | Russian | biochemical analysis | blood | 207 humans | no | no | yes | no | no | no | no |
| 4. | Ibraev et al., (2015) Kazakhstan [18] | Russian | Calculation of the allowable length of service based on indicators of the average shift concentration of chrysotile-asbestos dust | dust | unknown | yes | no | no | no | no | no | no |
| 5. | Amanbekova et al., (2014) Kazakhstan, [29] | Russian | review of own previous studies | n/a | n/a | yes | yes | no | no | no | no | no |
| 6. | Ibraev et al., (2014) Kazakhstan [34] | Russian | assessment of occupational disease risk | statistical data | 5 years | no | yes | no | no | no | no | no |

Table S2 (Continued)

| # | Authors | Language | Method | Sample | Sample size | Dust pollution at the workplace | Human data (stat data) | Biological samples from human and clinical examination | Studies on lab animals | Non-malignant ARDs -pneumoconiosis, pleural plaques | Asbestos-related Mesothelioma (ARM) | Asbestos-related Lung cancer (ARL) |
|-----|--|----------|--|--|-------------|---------------------------------|------------------------|--|------------------------|---|-------------------------------------|------------------------------------|
| 7. | Baselyuk et al., (2011) Kazakhstan, [22] | Russian | cytomorphological study of cells of the nasal mucosa and buccal epithelium of the cheeks | the nasal mucosa and buccal epithelium of the cheeks | 65 humans | no | no | yes | no | no | no | no |
| 8. | Ibraev et al., (2008) Kazakhstan, [23] | Russian | analysis of the function of external respiration, the study of the gas composition of arterial blood, plain radiography of the chest | human | 47 humans | no | no | yes | no | yes | no | no |
| 9. | Amanbekova et al., (2012) Kazakhstan, [24] | English | observational cohort studies | nasal mucosa | 106 humans | no | no | yes | no | no | no | no |
| 10. | Amanbekova et al., (2012) Kazakhstan, [25] | English | observational cohort studies | blood | 85 humans | no | no | yes | no | no | no | no |
| 11. | Koigeldinova et al., (2021) Kazakhstan, [30] | Russian | study of cytotoxic effect | asbestos dust | 30 rats | no | no | no | yes | yes | no | no |
| 12. | Ibraev et al., (2015) Kazakhstan, [26] | Russian | X-ray of chest and blood, aeration function of the lungs | human | 119 humans | no | no | yes | no | yes | no | no |
| 13. | Kurkin et al., (2015) Kazakhstan, [27] | Russian | Buccal epithelium cytograms | the nasal mucosa and buccal epithelium of the cheeks | 108 humans | no | no | yes | no | no | no | no |

| | | | | | | | | | | | | | | |
|--|---------|--|------------------|------------|-----|-----|-----|-----|-----|-----|-----|-----|----|----|
| 14. Ainagulova et al., (2022) Kazakhstan, [31] | English | Immunity monitoring | blood | 40 rats | no | no | no | no | no | yes | no | no | no | no |
| 15. Koigeldinova et al., (2022) Kazakhstan, [28] | English | multiplex immunological assay | blood | 125 humans | no | no | yes | no | no | no | no | no | no | no |
| 16. Ibraev et al., (2018) Kazakhstan, [35] | Russian | retrospective analysis of morbidity | statistical data | 1216 human | no | yes | no | no | no | no | no | no | no | no |
| 17. Korotenko et al., (2011) Kyrgyzstan, [19] | Russian | various | statistical data | n/a | yes | yes | no | no | no | no | no | yes | no | no |
| 18. Akhmadaliev et al., (2021) Uzbekistan, [32] | Russian | review of the situation in the country | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | no | no | no |

n/a – not applicable