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## The Capacity of Health Research in Afghanistan: Bibliometric Analysis

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### Abstract

**Background:** Credible evidence appropriate to the setting and accessible is fundamental to providing quality health services and education. Therefore, we aim to evaluate Afghanistan's health research capacity. **Method:** Bibliometric analysis was done in four databases by keywords of "Afghanistan" including the PubMed, Web of Sciences, Scopus, and Science Direct to see how many articles have been published on Afghanistan people's health problems and to determine the contribution of indigenous institutions and scientists.

**Result:** Out of 1075 articles that met our inclusion criteria, just 140 (13.02%) articles were written by scholars with affiliation with Afghanistan institutions (n = 34 org). Afghanistan Universities account for 25 articles out of 140. Ministry of public health, with 52 articles, French Institute for Children with 16 articles, and Kabul University of Medical Sciences with 11 articles were leading the organizations in Afghanistan in terms of publication numbers.

**Conclusion:** There are few numbers of publications considering the health of Afghanistan people. The indigenous health research system's

capacity is low, and dependency exists in different perspectives to the other countries. The universities of Afghanistan have not paly its role in producing knowledge.

**Keywords:** *Capacity Building, Health Research, Afghanistan*

## **Introduction**

Credible evidence appropriate to the setting and accessible is fundamental to providing quality health services and education. Healthcare education, policy, and practice need to be informed by evidence due to finite health care resources in low and middle-income countries (1). Such is also increasingly needed for cost-effective healthcare that considers the needs, preferences, collaboration and diversifying population. Clinical practice is remarkably similar globally. However, there are specific domains such as staffing, the scope of practice, financing, and staffing levels that vary from country to country as well as between care settings. In Low and Middle-Income countries such as Afghanistan, developing and validating approaches to foster better health services and health education is challenging due to the interaction of political, biological, environmental, and social factors. Furthermore, policy recommendations for such approaches lack sufficient supporting scientific evidence. In Afghanistan's context, the health system is poorly structured due to the long ongoing political instability (2 and 3). Indeed, it has been reported that clinicians in Afghanistan work in isolation with limited opportunity for continuing professional development, education,

and operate with a low capacity of clinical reasoning in their practices (4).

Moreover, a nation's social and economic prosperity depends on their people's health, that knowledge is crucial for good health. Data showed that more significant research investments are associated with better health outcomes for communities (5). The health research system is responsible for producing this knowledge that contributes to the health, and the capacity of research contributes to a country's sustainability (6). World Health Organization (WHO) and other international organizations focusing on health and health research stated that continuous improvement of human and physical health research resources is vital for the health research system (7 – 11). Moreover, conducting multidisciplinary research in the national health system was considered a priority for achieving Millennium Development goals by 2015 (12 – 14). One indicator of health research capacity in the national health system is competent indigenous researchers (15). Therefore, we have decided to evaluate the health research capacity in Afghanistan by measuring the output of medical research publications in four English language databases including the PubMed, Web of Sciences, Scopus, and Science Direct to see how many articles have been published on health problems of Afghanistan people and to determine the contribution of indigenous institutions and scientists.

#### Methods

To ensure that there was no similar study to ours, we conducted a scoping search in Cochrane Library, Google Scholar, PubMed, and TRIP Database.

*Data sources:* studies were searched in PubMed, Scopus, Science Direct, and Web of Science. *Search strategy:* keyword was Afghanistan (Table 1).

*Characteristics of studies included;* we included studies that were on the health of Afghanistan people.

Table 1. Description of the database search

No	Database	Result	Number
1	Scopus	Afghanistan AND (LIMIT-TO (AFFILCOUNTRY , "Afghanistan")) AND (LIMIT-TO (LANGUAGE , "English") OR LIMIT-TO (LANGUAGE , "Persian")) AND (LIMIT-TO ( SUBJAREA , "MEDI") OR LIMIT-TO ( SUBJAREA , "SOCI")	958
2	Web of Sciences	of ADDRESS: (Afghanistan) Refined by: LANGUAGES: (ENGLISH) AND COUNTRIES/REGIONS: (AFGHANISTAN ) Timespan: All years. Indexes: SCI-EXPANDED, SSCI, CPCI-S, CPCI-SSH, ESCI	952
3	PubMed	Afghanistan; filters activated: Humans, English, Persian	4596
4	Science Direct	Afghanistan; Research article, review article	14038
Total			20544

inclusion and exclusion criteria applied to selected articles

Inclusion Criteria	Exclusion Criteria
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the study reported on the health of Afghanistan people	the study did not report on the health of Afghanistan people
the study that was published in the English language	the study was not published in the English language

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### **Excluded studies**

studies without the focus on Afghanistan people were excluded. *Analysis:* four reviewers independently search for the articles, compared their articles, and always reached a consensus on studies to exclude and include based on inclusion criteria described above. For articles that met the inclusion criteria, the following were extracted and recorded in piloted data set in Excel; spreadsheet. These included: author and affiliation, year, sample, subject, study design, and fund sources. We have analyzed the data in different periods of the recent history of Afghanistan. Before 1978, the country was ruled by a king, 1979 – 1992 communist party was in power with the invasion of Soviet Union, 1993 – 2000 civil wars with Taliban period and between 2001 – 2019 democracy period with the support of US lead coalition invasion of Afghanistan. Selected articles were kept for future narrative, and excluded articles were also kept in a separate file for future references were appropriate.

### **Result**

Twenty thousand five hundred forty-four articles were the result of the search in all databases (table 1). After applying the criteria, 1075 articles met the inclusion criteria published between 1943 up to 2019. United States of America (USA) was leading in terms of

first author affiliation of country (n = 276) followed by Afghanistan (n = 168), United Kingdom (UK) (n = 130), Pakistan (n = 51) (table 3). Infectious diseases with 272 articles were the most published topics (table 4), and maternal and child health, health care system and trauma and surgery with 201, 116, and 114 were after of it, respectively (table 5). Cross-sectional design was the common method in the context of Afghanistan followed by retrospective study (n = 97), commentary (n = 93) and case report (n = 63) (table 6). By the year, most of the articles were written between 2001 up to 2019 (n = 1006), and the last published works were done during 1993 until 2000 (n = 54) (Chart 1).

Out of 1075, just 140 (13.02%) articles were written by scholars affiliated with Afghanistan institutions (n = 34 org). Afghanistan Universities account for 25 articles out of 140. Ministry of public health, with 52 articles, French Institute for Children with 16 articles, and Kabul University of Medical Sciences with 11 articles were leading the organizations in Afghanistan in terms of publication numbers (table 7). With respective periods, 108 articles were written in 2001 – 2019 and 5 articles in 1993 – 2000 (Chart 1). Articles which had the Afghan first author were funded by organizations related to the including countries USA (n = 12), WHO (n = 7), Japan (n = 5) and UK (n = 4) (table 8).

### Discussion

This study was a bibliometric analysis of indigenous health research capacity in Afghanistan with respective English databases, including PubMed, Web of Sciences, Science Direct,

and Scopus. According to this study's result, there are just 140 publications with the first author from Afghanistan's institutions in 1943 up to 2019. Universities in Afghanistan published 25 articles in the mentioned period. Findings indicate the low capacity of the indigenous health research system in the country's health sector. In 2002, the United Nations Educational, Scientific and Cultural Organization (UNESCO) reported that in estimation in the developed world in every 1000 people 3 of them were researchers compared to developing countries, 3 out of every 10,000 people (16). The estimation mirrors the inequalities in a health research capacity. Publications with Afghanistan's affiliation mostly funded by other countries' institutions indicate the lack of national strategy regarding research capacity building. Africa's experience showed that researchers' financial dependency on developed countries' institutions was a barrier in research capacity building programs (17). The result indicates the knowledge gap regards various diseases in Afghanistan; we have just some publications on infectious disease, maternal and child health, and the healthcare system that is not enough. The descriptive cross-sectional design commonly used method does not answer critical questions regarding Afghanistan's health problems. To answer those questions, we need different methods of study.

## **Conclusion**

There are few numbers of publications considering the health of Afghanistan people. The indigenous health research system's capacity is low, and dependency on the country's indigenous health

research system exists in different perspectives from the other countries. The universities of Afghanistan have not paly its role in producing knowledge.

### **Recommendation**

In Afghanistan, to indigenize research, the following should be done:

Political will and vision toward research-based systems

Developing a national plan for research

Investing in research capacity building programs in the country's health research system to create and sustain resources to carry out essential health research.

Government and international partnership toward empowering the indigenous researchers and Institutions to carry out the essential research that benefits Afghanistan people and beyond by sharing the evidence open access to the world.

Creating an enabling environment includes competent institutional leaders, funds for research, salaries, career structure, and infrastructure.

Creating a platform for access to scientific information and engagement with international scientific communities

The scientific disciplines should become part of national institutions.

The leaders should be trained to have the skills of situational analysis, strategic planning, knowledge management, consensus building, partnership building, and negotiation; financial management and systems performance assessment



Directing budget toward health research system.

Table 3: First Authors Countries/International Organization Affiliation

No	Country/International Organization	Number of Articles
1	United States of America	276
2	Afghanistan	168
3	United Kingdom	130
4	Pakistan	51
5	World Health Organization	35
6	Germany	34
7	Japan	33
8	France	31
9	Iran	26
10	Canada	24
11	UNICEF	14
12	Switzerland	13
13	Netherlands	13
14	MSF (doctors without border)	12
15	NATO (North Atlantic Treaty Organization)	11
16	India	11
17	IRC (International Red Cross)	10
18	Thailand	9
19	South Africa	7
20	Australia	7
21	Sweden	6

22	Italy	6
23	Poland	5
24	Russia	4
25	Belgium	4
26	Qatar	3
27	Spain	3
28	Cure International Hospital	3
29	Bangladesh	2
30	Denmark	2
31	Turkey	2
32	Korea	2
33	Brazil	2
34	Estonia	1
35	Norway	1
36	Saudi Arabia	1
37	Finland	1
38	Philippine	1
39	World Food Program	1
40	Newzeland	1
41	Singapore	1
42	Kenya	1
43	Greece	1
44	Nigeria	1

Table 4. Number of articles with focused on infectious diseases

No	Issues	Number of studies
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1	Malaria	58
2	Polio	50
3	Leishmaniasis	45
4	Tuberculosis	21
5	HIV	25
6	Hepatitis A,B,C and E	19
7	Parasitic infection	9
	Measles	8
8	Syphilis	4
9	Cholera	4
10	Influenza	3
11	Brucellosis	3
12	H-Pylori	3
13	Crimean-Congo Hemorrhagic Fever	3
14	Diphtheria	2
15	Typhus	2
16	Pneumonia	1
17	Tetanus	1
18	Smallpox	1
19	Zoonotic and vector born infection	1
20	Kala-azar	1
21	Bacteriology and viruses	8
	Total	272

Table 5. Number of articles on different health subject

No	Issues	No of Studies
1	Maternal and child health	201
2	Healthcare System	116
3	Trauma and Surgery	114
4	Public health	96
5	Mental Health	38
6	Drug and Drug addiction	30
7	Genetic	27
8	Cardiovascular Disease and Diabetes	15
9	Amputation/Disability	13
10	Midwifery	12
11	Orthopedic	11
12	Emergency	10
13	Cancer	7
14	Blood Transfusion	6

15	Nutrition	6
16	Burn	6
17	Dentistry	5
18	Poisoning	5
19	Medical Physics	4
20	Nursing	4
21	Physiotherapy	3
22	Pathology	2
23	Research	1
24	Anemia	1
25	Traditional Medicine	1
Total		734

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Table 6. Number of Articles with Respective Design of Study

No	Methodology	No	of
		Studies	
1	Cross-sectional	273	
2	Retrospective study	97	
3	Commentary	93	

4	Case Report	63
5	Letter to Editor	61
6	Report and News	54
7	Review	53
8	Qualitative study	35
9	Trial	26
10	Experimental	20
11	Prospective Observational Study	18
12	Cohort Study	12
13	Case Study	12
14	Economic Evaluation Study	11
15	Case Control	9
16	Viewpoints	8
17	Case Series	6
18	Quasi-Experimental	3
19	Evaluation Study	3
20	Mixed Method	3
21	Therapeutic Study	2
22	Ethnographic Study	2
23	Epidemiological Evaluation	2
24	Non-RCT Control	2
25	Conference	2
26	Screening	2
27	Pilot Study	1
28	Short Report	1
29	Predictive Statistical Model	1
30	Disease Mapping	1

31	Special Article	1
32	Policy Analysis	1
33	Research Note	1
34	Diagnostic Accuracy Study	1
35	Short Communication	1
36	Comparative Study	1
37	Validation Study	1

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Table 7. Afghanistan Organization that Published Articles

No	Organization	No of Articles
1	Ministry of Public Health	52
2	FMIC	16
3	Kabul Medical University of Medical Sciences (KUMS)	11
4	Indira Gandhi Hospital	10
5	Faculty of Pharmacy, Kabul university	7
6	International Rescue Committee	3
7	Afghanistan National Army	3
8	Afghan Independent Human Rights Commission	3

9	SMART Afghan International Training and consultancy	3
10	Jhpiego	2
11	Mussa Wardak Hospital	2
12	Hamrah Curative clinic	2
13	WHO	2
14	USAID	2
15	Kandahar University	2
16	Nangarhar University	1
17	Cure International Hospital	1
18	Avicenna Hospital	1
19	UNICEF	1
20	Kateb University	2
21	Revolutionary Association of Women of Afghanistan	1
22	Association of Avicen-Kabul	1
23	Tech-Serve Management Science for Afghanistan	1
24	Ministry of Higher Education	1
25	HealthNET TPO	1
26	Department of Biochemistry, Kabul University	1
27	Musturat University of Women Hospital	1
28	Anti-TB Association	1
29	MSF	1
30	Help the Afghan Children	1

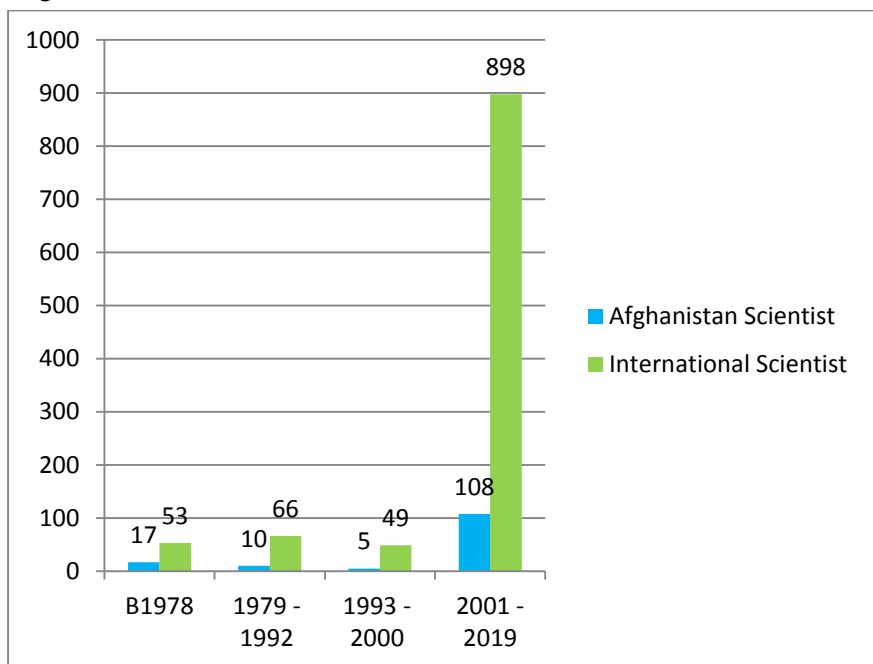


31	Afghanistan Specialists in Medicine Association	1
32	United Nations Office on Drugs and Crime	1
33	Kunduz University	1
34	Uhnato University	1

Table 8. Number of Articles with Funding Sources

No	Country/Organization	No of Articles
1	USA	12
2	WHO	7
2	Japan	5
3	UK	4
4	Global Funds for AIDS, TB and Malaria	2
5	UNICEF	2
6	Office of the Surgeon of National Army of Afghanistan	1
7	Aghakhan Foundation	1
8	France	1
9	Iran	1
10	UN	1 <sup>^</sup>
11	World Bank	1
12	Australia	1
13	European Commission	1

Chart 1: Published articles in different period of times in Afghanistan



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