Chapter I

INTRODUCTION

1.1 PREAMBLE

Malaria imposes great socio-economic burden on humanity, and with six other diseases (diarrhea, HIV/AIDS, tuberculosis, measles, hepatitis B, and pneumonia), accounts for 85% of global infectious disease burden.\textsuperscript{1,2} Malaria affects more than 90 countries and territories in the tropical and subtropical regions, and almost one half of them are in Africa, South of Sahara. About 36% of the world population (i.e., 2020 million) is exposed to the risk of contracting malaria. The World Health Organization estimates 300-500 million malaria cases annually, with 90% of this burden being in Africa.

Malaria was eliminated from the United States and from most of Europe during the first half of the twentieth century as a result of changes in land use, agricultural practices and house construction and some targeted vector control. The development of the highly effective, residual insecticide DDT initiated a global eradication programme in the 1950s and 1960s which was initially very successful in many countries such as India, Sri Lanka and the former Soviet Union. However, this success was not sustained because of the costs of the programme, the resistance of many communities to repeated spraying of their
houses and the emergence of resistance to DDT. The past decade has seen a pronounced re-awakening of interest in the research on malaria in the richer countries of the world. Statements on the need for greater efforts to control malaria have been made at a number of high profile medical conferences. This resulted in global research output in malaria research.

1.2. MALARIA RESEARCH

Despite tremendous progress in malaria research during the past two decades, this disease still represents a major threat to populations in many parts of the world. As a result of poor epidemiology, the exact extent of the malaria problem, as with many other communicable diseases, is not known. However, according to experts, it is estimated that nearly 300–500 million people suffer from malaria each year and almost 2 million die—mostly children younger than 5 years old, with sub-Saharan Africa accounting for 90% of them.

The global research community must take up the challenge to work toward the eradication of malaria. In the past, malaria research has focused on drugs and vaccines that target the blood stage of infection, and mainly on the most deadly species, *Plasmodium falciparum*, all of which is justified by the need to prevent and treat the disease. This work remains critically important today. However, an increased research focus is now being placed on potential interventions that aim to
kill the parasite stages transmitted to and by the mosquito vector because they may represent more vulnerable targets to stop the spread of malaria. Hence there exist research into malaria parasite biology that has the potential to provide new intervention targets for antimalarial drugs and vaccines. This paved way for global literature output on malaria research.

1.3. BIBLIOMETRIC STUDY

Bibliometrics is one of the rebate truly interdisciplinary research fields concerned with measuring the output side of almost all scientific fields. Bibliometrics is the study of published literature and its usage. This includes studies of impact, diffusion of innovation, bibliographic coupling, citation and co-citation patterns and other statistical regularities in scientific and scholarly productivity and communication.

Pitchard (1969) emphasized that the purpose of bibliometrics is “to shed light on the processes of written communication and of the nature and course of development of a discipline, by means of counting and analyzing the various facets of written communication”.

Bibliometric is a set of methods used to study or measures texts and information. Citation analysis and content analysis are commonly used in bibliometric methods. While bibliometric methods are most often used in the field
of library and information science, bibliometrics have wide applications in other areas. In fact, many research fields use bibliometric methods to explore the impact of their field, the impact of a set of researchers, or the impact of a particular paper. Bibliometrics is now used in quantitative research assessment exercises of academic output while attempts starts to threaten practice based research.

The researchers of Library and Information Science extensively use bibliometrics as a tool to identify the pattern of publication, authorship and secondary journal coverage with the objectives of getting an insight into the dynamics of growth of knowledge in the areas under consideration.

1.4. NEED FOR THE STUDY

Few bibliometric studies dealing with malaria research have been reported in the literature in the past. Maclean et al. and Lewison et al. estimated the financial resources going into malaria research. Garg et al. estimated the quantum of malaria research output during 1990 and 2000 using PubMed (the online edition) and the Commonwealth Agricultural Bureaux International (CABI) CD-ROM incorporating the Tropical Disease Bulletin (TDB). Lewison and Srivastava mapped the malaria research output during the years 1980–2004 using the Science Citation Index (SCI) and malaria vaccine research. However, none of these studies deals with the status of malaria research other than the medical data bases, which constitutes approximately 9% of the total malaria research output.
1.5. SIGNIFICANCE OF THE STUDY

As mentioned earlier, bibliometrics is concerned with analysis of the characteristics of published literature including: studies of dispersion of literature on various topics; statistical analyses of content types, references, etc., citation and co-citation studies within and across particular disciplines. In academic and scientific work, research publication is the chief means of communicating research, and also a primary means of recognition and reward.

In view of the above, the researcher intended to undertake that there was no such a study in the literature about the publication productivity of Malaria especially conducting research in the field of medical as a whole. The topic of the present study is “A Scientometric Analysis of the Trends in Malaria Research”. The study aims to ascertain the growth of literature, sources of publications, identification of prolific authors, institutions, core journals and their related impact factor, etc. in the field of Malaria during the period 1974-2013.