

## Research and Ramadan Fasting: Not too Much of a Good Thing!

Over the last 30 years, there has been an exponential rise in the volume of literature covering many aspects of health-related issues of Ramadan fasting [Figure 1]. This reflects the relentless increase in interest in research and clinical practice concerning the health implications of the annual fasting observed by millions of adult Muslims all over the globe.<sup>[1,2]</sup>

“Ramadan research 2017” in the current issue of this Journal is presented in a systematic manner, gathering initially relevant information addressing fasting in healthy individuals then moving on to diverse topics related to diabetes, endocrine, and other medical specialties and ethical and economic issues.<sup>[3]</sup> Of relevance, many basic science reports in healthy individuals and fasting were published this year. As noted by the authors, this is a logical step toward better understanding of the impact of fasting on individuals with certain health issues.

The authors of this paper are congratulated for the effort, meticulousness, and comprehensive nature of their paper. In this detailed report, they highlighted the importance of the health consequences of Ramadan fasting, hoping to encourage researchers to direct more effort addressing this topic. It is encouraging to find that the number of reported publications about Ramadan fasting and health is rapidly increasing.

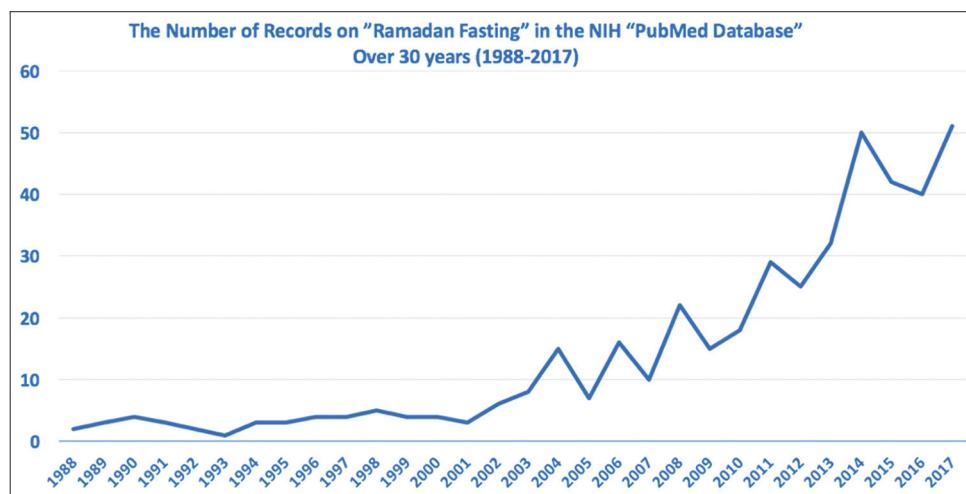
One disappointment is the glaring deficiency in the number of randomized controlled trials in this field. It remains disappointing and alarming to see that most of the publications relating to Ramadan fast and diabetes are mainly sponsored by pharmaceutical companies, small in their design and aimed at solely promoting the drug market. The volume of research in this field is increasing and well documented, but the authors

of the article in this journal have failed to compare it to the amount of diabetes research in general. One wonders what will be the percentage from the total.

The authors highlighted the Ramadan fasting research year in review and tried to give the reader a bird’s eye view of the current thinking and the trends with one reassuring finding that some research is being done in the developing world.<sup>[2]</sup>

We should now start looking at exercise where a lot more is required so that evidence to support recommending exercise will eventually become available. The studies related to energy intake just confirm previous observations of variability between regions and cultures. Although we have had multiple daily injection and pump therapy available for some time, we are unfortunately still at the observational stage in this area. Perhaps one area with some optimism is the educational programs and their implementation pre-Ramadan, if helpful, should they be repeated annually?

Large prospective studies, supported by academic or governmental institutions in the Muslim world representing nearly one-third of the world population, are still lacking. A single large multi-country, retrospective, observational study with data captured before, during, and after Ramadan was reported in 2017.<sup>[4]</sup> It included a cohort of 3250 individuals with type 2 diabetes mellitus in four culturally distinct regions. Despite the introduction of the important concept of patients’ stratification for those planning to fast, several limitations were noted in this study; it is an observational study that lacked proper quality assurance and internal and external validation and it did not take into consideration patients’ specific conditions and living circumstances.<sup>[5,6]</sup>



**Figure 1:** The depiction of the exponential rise in PubMed records in response to the search using the term “Ramadan fasting” reflecting the increasing interest in and the global production of scholarly work (Courtesy of Dr. Salem A Beshyah, Abu Dhabi, UAE)

On a positive note, the studies published in 2017 covered several aspects of endocrine and medical subspecialties. Although small in their design, they brought very useful recommendations for patients with medical problems such as adrenal insufficiency, chronic renal failure, respiratory conditions (chronic obstructive pulmonary disease and bronchial asthma), gastrointestinal issues (nonalcoholic fatty liver and peptic ulcer disease), cardiovascular problems (hypertension and coronary thrombosis), and specific neurological conditions (Parkinsonism and stroke).

Few publications called for developing educational programs that involve religious leaders as well as health-care professionals to ensure patients receive health advice combining religious and medical directives. Surprisingly, only few articles in 2017 touched on the impact of Ramadan on health economics in the Muslim world of nearly 2 billion.<sup>[3]</sup>

Research in the field of Ramadan fasting will remain fragmented and depend on the good will and initiative of young researchers, with the pharmaceutical companies having the last word. It is time that an international group is formed not to draft guidelines but to draft guidance on research topics and harmonize objectives and results and to form a strong group affiliated to the International Diabetes Federation and other diabetes organizations. Finally, this paper's optimistic look is valid and will be an inspiration for researchers in the field, but it is also a call for action for research and proper funding.

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Equal contribution.

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### Conflicts of interest

There are no conflicts of interest.

### Compliance with ethical principles

Not applicable.

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