Comment on: Oncology research in Saudi Arabia over a 10-year period. *A synopsis*

To the Editor

I have read with interest the recent article in Saudi Medical Journal, Alghamdi et al[1] reported on the progress of oncology research in the Kingdom of Saudi Arabia. They conducted an observational study to compare the number and quality of research between 2 to 5-year periods (2008-2012 and 2013-2017). The authors found a trend towards increasing amount of the research work done over time but improvements in the quality and scientific impact were lacking with Levels of Evidence of III/IV in majority of the publications (98.4%). Most of the publications were case reports and case series (60%), with only 14 clinical trials and a median number of citations of 4.

The data presented is of great significance to guide the academic community and the national institutions through strategic planning for more successful and influential research over the next period to enhance treatment outcome and quality of life in cancer patients. This study is impressive with screening of 3726 abstracts over 10 year-period and inclusion of 839 abstracts for further evaluation. However, some limitations were discussed by the authors, and there are other limitations which we would like to address.

First, The authors did not comment on the category of research which could be particularly relevant to the local population including screening for early detection, correlative translational research for mechanisms of drug resistance and predictive markers of response, pharmacogenomic-based studies to explore variations in risk of toxicity and tumor response, and biomarker led studies to look for subpopulations of maximal treatment benefit. Classifying publications based on tumor subtype and the cancer incidence could further reflect the research activity in different cancer sites.

Second, the authors used the 2011 Oxford Centre of Evidence-Based Medicine Levels of Evidence (OCEBM-LOE) to grade the quality of publications which is a widely acceptable tool for evaluation. But this system has been questioned due to missing clear definition of study design limitations, and neglecting the value of non-randomized trials in certain circumstances where randomization might not be an ethical or practical approach.[2] It is also hard to rely on the current grading systems to make a conclusion on significance of the study in respect to novelty of the research and the impact of previous work on our understanding of cancer and quality of patients' lives. Moreover, observational studies remain the most appropriate method to evaluate rare side effects in post-marketing surveillance, particularly taken into account the genetic variability across populations which could influence treatment response and toxicity.[3] In another aspect, the authors compared publications of the 2 periods in respect to the journal impact factors, but there have been discussions regarding the merits and reliability of the journal impact factor as a reflection of the publication impact and quality.[4]

It could be controverted that research requires freedom to explore ideas and that most published reports are adding to our knowledge. But in reality, we are facing rising cancer incidence and poor outcome, with minor changes in survival achieved over decades in several tumors such as small cell lung cancer and glioblastoma multiform.

It is plausible that the rising number of oncologists and the motivational incentives have contributed to the observed increase in research work over the studied period. The paper also indicates good collaborative work between subspecialties with 69.5% of the publications led by non-oncologist.

However, we agree with the authors that collaboration between national oncology centers could significantly increase recruitment, and allow an adequate sample size to detect smaller effect size, and increase reliability and generalizability of the results. Furthermore, this approach could potentially shorten the duration of the study and reduce the costs more efficiently. It is also encouraged to engage statisticians, scientist, and clinical research team at an early stage of the trial planning with careful consideration of key elements such as the trial goals, design, cost, duration, methodology, statically analysis, patients' cohort, and sample size to ensure success of the trial. Most importantly, the question to be answered in our projects should be clinically relevant for maximal utilization of the resources, time and patients involved.

In summary, Alghamdi et al[1] reported important findings that are relevant to our community to guide future directions of research in the field of oncology. Positive and organized work environment are required to combine interpersonal skills and create high-performing collaborative research teams across oncology centers in the country. This system could successfully drive the resources available and clinicians' efforts to produce both high standards of care and research work of larger impact in the community. In parallel, it is also critical to build a system that facilitates easy access to exploit clinical data, pharmacovigilance signals, tissue samples,

and gene expression profiling while maintaining basic ethical requirements of scientific research.

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Reply from the Author

Thank you for giving us the opportunity to respond to the correspondence by Dr. Al Hussain. We would like also to thank her for taking time to review and comment on our publication entitled "Oncology Research in Saudi Arabia over a 10-year Period: A Synopsis".[1] Here we try to respond to her thoughtful comments.

First, Dr. Al Hussain rightfully indicated the lack of classifying research according to its purpose, like screening and incidence. In fact these types of research were included and classified based on their epidemiological types (cross sectional, case control, retrospective cohort, review, and so on). In our study, we elected to report the epidemiological type of the included research studies. However, the included publications that discussed screening were 19 in total. Among them, 7 were review articles, one was case control, 5 were cross sectional surveys, one was prospective, 4 were retrospective studies, and one was guidelines. In regard to incidence and prevalence of cancer in Saudi Arabia, we found a total of 20 publications over the time period (2008-2017). In regard to the cancer subtype, although we think it would be of interest to show the number and level of evidence of Saudi publications in each cancer subtype, it was beyond the scope of our research. In addition, we elected to exclude preclinical research studies (example, translational research, and so on) as they may need expertise in identifying them that we currently lack in our research team, specially that many of them contained specific names of genes and molecular tests in their titles. Furthermore, thier studies often did not include patients' outcomes. Therefore, we limit our inclusion criteria to clinical publications.

Second, we acknowledge that 2011 Oxford Centre of Evidence-Based Medicine Levels of Evidence (OCEBM-LOE) may not be very comprehensive and can only be used as a surrogate for quality of research.[5] The choice of using it was based on similar previously reported studies.[6-11] Similarly, the impact factor should not be considered an absolute measure of research impact. There are other more sophisticated measures of quality and impact of healthcare research.[11] However, they are less practical than OCEBM-LOE and none of them is considered standard.

In conclusion, our study was intended to provide an overview and insight on the status of clinical publications pertinent to the field of oncology in Saudi Arabia over a 10 year period. Along with Dr. Al-Hussain suggestions, we think that collaboration between centers in Saudi Arabia is the major key to facilitate research and save resources.

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