

## Editorial

# Critical Appraisal of Published Research Papers: A Reinforcing Tool for Evidence-Based Medicine

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Critical appraisal ensures that an article is completely evaluated, identifies the study's strengths and weaknesses, and helps clinicians utilize appropriate interventions. The method of critical appraisal may be very time consuming and demands a careful reading of the whole article especially methodology and statistical analysis.<sup>1,2</sup> The Global Burden of Disease Study (GBD) is now the most important global observational epidemiological research conducted. It describes global, national, and regional mortality and morbidity from key diseases, injuries, and risk factors. Examining patterns from 1990 to the present and comparing populations helps comprehend 21st-century health challenges. Today, there is a lot of medical information available through different media.<sup>2,3</sup> It's important for medical graduates to know how to search for, evaluate, and use valid information to solve clinical problems (Evidence based medicine (EBM) practice).<sup>4,5</sup> The article was written to critically appraise the article titled, “*Global, regional, and national trends of incidence, prevalence and years lived with disability 2 for Spinal Injuries in 204 countries and territories, 1990-2019: findings from the Global 3 Burden of Diseases (GBD) study 2019.*”

Researchers provide data and age-standardized rate changes with 95% Confidence interval for the incidence, prevalence, and years lived with disability (YLDs) of spinal injuries at and below the neck level globally, as well as for the 21 GBD regions and 204 countries and territories, from 1990 to 2019.<sup>5,6</sup> The article's introduction was well-organized overall. It covered all of the important study variables, was

thorough, and gave appropriate context. All of the literature was current and came from reliable publications' original sources. By searching for relevant papers, comprehensive estimates for spinal injuries have been reported. The introduction's only flaw was the lack of a full description of the many types of spinal cord injury (SCI) that were being employed.<sup>4,6</sup>

Critical appraisal of methodology and results sections showed that even though the study question is clearly stated, the paper does not include the inclusion/exclusion criteria. A comprehensive review of the literature is done. The number of people who selected studies is not disclosed. It is unclear how many people have taken data from research. The excluded studies are not included in the list.<sup>6,7</sup> There is no indication of the data sources for the eligible studies. There is no conceptual framework in Figure format that expresses the methodology of years lived with disability (YLDs). The study's instruments and end measures were each sufficiently detailed in detail and backed up by pertinent, cited evidence. However, a flow diagram of the search for existing burden of disease studies is not mentioned.<sup>4,6</sup> The important features of the included studies are not provided. The scientific merit of the listed studies is not assessed or reported. There are not any studies subdivided by WHO region in the number of studies on the global burden of disease. The accuracy or any data gaps are not covered in the discussion. A comparison of life year outcomes for various disease and injury categories in terms of years lived with disability (YLDs) is not mentioned.<sup>4</sup>

The study's clinical importance is discussed by the authors; however the main conclusions are not presented in the first few lines. It is insufficient to properly compare and contrast the main findings of the study with those of earlier research. At the conclusion of the study, the authors list and acknowledge the study's limitations.<sup>4,7</sup> The conclusions drawn are consistent with the findings of the study. Particularly in terms of directing evidence-based prevention and resource allocation for the treatment of spinal injuries, this study is very clinically important and facilitates health care planning. Study has improved our understanding of spinal injuries' incidence, prevalence, and years lived with disability (YLDs) from 1990 to 2019 in 204 countries and territories.<sup>4,7</sup> By age group, gender, and location, it has also evaluated the availability of health data at the international, regional, and national levels. This analysis, which is based on GBD 2019, has the same general limitations as past works, including challenges with precisely quantifying all sources of uncertainty, delays in data availability, variation in coding techniques, and other biases.<sup>7,8</sup> The entire amount of data input is constrained. It is not possible to draw conclusions about causal links. Because a higher proportion of sickness and premature mortality may occur when a cause presents in individuals with a high burden, individual cause risk may not be fully reflected in population level estimates.<sup>8,9</sup>

### References:

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