Editorial

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Constructing Multiple Choice Questions (One Best Type)

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Multiple Choice Questions (MCQs) emerged as an effective tool of assessment. The high reliability, versatility, and ability to mark quickly has made MCQs an efficient tool of assessment. One method of assessment cannot have the sole burden. Different methods must be applied, and all the methods have their strengths as well as weaknesses. MCQ – based examinations are time efficient and short, but still allows to check the subject to a greater breadth. This format ensures a broader coverage of content. It predicts and correlates well with the overall competence and performance of examinee. The knowledge required to set a good quality MCQ is greater than to answer one. The construction of an MCQ requires in-depth knowledge of the subject

The basic MCQ model comprises a stem, lead-in question followed by a list of options. The option, which most appropriately matches the key in a MCQ is considered as the "correct answer" and the other options are the "distractors". Multiple choice questions address all levels of cognitive domains, as proposed by National Board of Medical Education (USA),i.e., C1, C2 and C3, in varying degrees. C1 checks "Recall" (e.g., list, enumerate, define, identify, etc). C2 is for "Comprehension" (e.g., understand, describe, explain, illustrate, interpret, etc.) and C3 means for "Problem Solving" (e.g., diagnosis, management, implement, use, method, differentiate, implement, etc.) MCQs that are well-designed should focus on the application of medical knowledge (context-rich) rather than just the recall of facts (context-free).

The normal thinking pattern of a doctor first deal with history and clinical examination (theme). After that, the doctor asks a question (Lead in) and then finds out the answers, e.g., diagnosis, investigations, treatment, prognosis, etc (Subtheme/Options). While creating or constructing an MCQ, the order will be reversed. First to choose is the system and theme (e.g., antibiotics, enzymes, lethargy, diet, tachycardia, etc….). Then to select the context or subtheme (e.g., diagnosis, lab test, treatment, pathogenesis, morphology, etc….). Making a list of options is the next step. List must be homogeneous. One of the provisional options will be selected as correct one. Other options will be distractors (not false). All selections should appear to be proper, simple to understand, and as brief as feasible. It's critical that this list should be consistent (i.e., all diagnoses or treatments, lab tests, problems, etc.). The chosen choice must be demonstrably superior to the other alternatives/distractors (although the other options do not have to be totally wrong). Now to construct the lead-in question (What?; Which?; When?; Who?;). After that the information statement or stem or scenario is framed.

While cross checking a stem or information statement, it is important to find out its relevance with the blue print of examination. Language, grammar, and the presence of required and relevant information all needs to be looked for. For lead-in, an answer in affirmative is required for the question that “Does the lead-in question clearly indicates how to answer the question?" If a correct reply, to lead-in, can be given without looking at the options, then it can be assumed that MCQ is appropriately framed. While cross checking options there are some questions to be answered in the affirmative ,e.g., " is there one clearly correct answer?"; "are all distractors plausible to a weak candidate?" ; "are all options homogenous?"; "all are options of same length?"; " are terms like "all of the above", "all of the following, except" and "none of the above" are not used?"; "are the options are free of imprecise terms, like frequently, sometimes, often, etc?". No word from the stem should be repeated in option which can be act as a clue.

The lead-in question must give clear instructions to examinee. In question statement (lead-in) the most appropriate words used are: What (information, type)?, When (time, day, year, etc)?, Which (choice)? and Who (name,etc)?. Ambiguity, tricky questions, and the use of imprecise terms best be avoided. Words like "Always", "never" and "only" are contentious and should not be used.

In parallel to "correct answer" distractors also need to be framed with equal effort. All correct answers and distractors should be true. They should include facts that are, to a varied degrees, acceptable. Distractors should be inferior to the correct response, but also credible to all candidates. The distractor helps to predict how an inexperienced examinee will react to the information given in statement above.

A test to assess the MCQ is "cover test". If the whole stem is covered/hided and a candidate or student reads the question and just by reading the question he can give an answer, then apparently there is no need of the stem. So, therefore stem must be revised because it is failing the "cover test". Similarly if out of many sentences of stem one sentence is covered and still the candidate, by reading the other sentences and then the lead –in, can answer the question, so what is the need to put in that sentence in the stem. That sentence is not passing the "cover test" and the sentence should be removed from the stem. Proper construction of lead-in question can be ensured by answering without looking at response options. As a check, the response options can be covered and an attempt is made to answer the question. If the candidate can reply for correct option then it is passing the "cover test"

Once an MCQ data bank is generated then it needs to be continuously evaluated. The critique process, for tools and items of an MCQ bank, can be accomplished by different assessment methods, like validity, reliability, difficulty index, discrimination index, alpha (reliability) if item deleted and distractor efficiency. All these ensures credibility, All creative efforts need appraisal and to be critiqued. Everything changes. Everything in the horizon is in a continuous state of evolving, refining, improving, adopting and enhancing.

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