



REVIEW ON ASSESSMENT IN AYURVEDA MEDICAL EDUCATION. EVOLVING PERSPECTIVE AND CONTEMPORARY TRENDS.

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ABSTRACT

Ayurveda is an ancient Indian Medical system traditionally thought in *the Gurukula* method of the education system. Since the British era and post-independence Ayurveda Medical Education had transformed and adopted the mainstream contemporary education system. The apex body of education systems will regularly give guidelines to adapt different teaching-learning methods in Ayurveda Medical Education. Routinely a summative assessment is done to certify the students at different levels by written and oral examinations. These summative assessments have some limitations and may fail to assess the different competencies of students. Here an attempt is made to review the need for different assessment methods and their use for better teaching-learning in Ayurveda Medical Education. Different formative assessments like OSPE, OSCE, DOPS, mCEX, and CBD can be used in Ayurveda Medical Education. These will help us to assess the different competencies of a student at a different level. The inclusion of contemporary assessment methods in Ayurveda Medical Education will help us to develop a better, competent, and efficient health care professional.

Keywords: Gurukula, Assessment, Competencies, Ayurveda Medical Education.

INTRODUCTION

Ayurveda is an ancient Indian medical system. Gurukulais an ancient Indian education system used to transfer knowledge of *Veda*, *Vedanga*, etc through *Guru-Shishya Parampara*. Traditionally Ayurveda is also thought in the *Gurukula* method of the education system. Knowledge was transformed from one generation to the next by the oral traditional method. Since the British era and post-independence Ayurveda Medical Education had transformed and adopted the mainstream contemporary education system. Assessment is a very important part of the education system which is directly linked with learning objectives and teaching-learning methods. Word 'Assessment' was derived from a Latin word that means "to sit beside and judge" and is appropriately used to describe the systematic gathering of information about what the learner should know, be able to do, or work towards. It is usually associated with some measure-

ment, marks, or percentages, but could be associated with specific descriptors like excellent, good, average, or poor. In the Ayurveda Medical Education system newer teaching and learning methods were incorporated from time to time. Here an attempt is made to review the importance of assessment and the utility of different assessment methods in the Ayurveda medical education system. Miller introduced a conceptual framework in the form of a pyramid (Fig.1) where various layers of the pyramid are defined not as traits but as verbs or actions, which are observable and can be judged and thus used for assessment. These are—'knows'-factual knowledge, 'knows how'-analysis, application, and interpretation of knowledge, 'shows the how'-actual application and practical demonstration in a simulated situation, and 'does' -perform in real situations.¹



Miller's Pyramid of Clinical Competence²

Current assessment scenario and need for reforms.

Assessment should link to learning outcomes and institutional goals. The current assessment system in Ayurveda medical education is more focused on the summative type of assessment where program outcomes were measured at the end of the learning process by written and viva tests. As per the Minimum Standard of Education (MSE) by apex body³, universities and colleges conduct a summative assessment at the end of each phase/year. Due to some limitations in the current Minimum Standard of Education

(MSE) in Ayurveda, there is a need and scope for reforms in the assessment process. NCISM (Earlier CCIM) is an apex body of Ayurveda medical education. Apex bodies give time-to-time guidelines for teaching, training, and assessment for UG and PG programs as Minimum Standard of Education (MSE). National education policy-2020, UGC quality mandate-2021,⁴ and new guidelines from NCISM guide to implementing different summative and formative modes of assessment, use of assessment rubrics, credit system, and credit score in UG, PG programs. But this guideline does not specify which component of

the curriculum to be assessed by which assessment method. The assessment process should test the learning outcomes, knowledge gained, attitudes developed, and skills mastered by a student during an academic program. It intends to promote student-centric learning with continuous evaluation of students' performance. As concerned to Ayurveda medical education the knowledge, skill, and attitude gained by students need systemic assessment by different assessment modes. Medical education has different horizons like theory, laboratory practical, clinical medicine, and surgery. To assess these horizons different assessment methods were needed.

While most teachers were well-versed with the summative or certifying purpose of assessment (assessment of learning), using assessment as an educational tool (assessment for learning) is a relatively recent phenomenon⁵. Formative assessment is a range of formal and informal assessment procedures conducted by teachers during the learning process in order to improve student attainment. The goal of a formative assessment is to monitor student learning to provide ongoing feedback that can help students identify their strengths and weaknesses. This will help to improvise the learning process. Continuous Structured Formative Assessment will help us to develop a better, competent, and efficient health care professional.

Purpose of Assessment⁶

Mr. D Rowantree quoted six purposes of assessment:

1. Selection of candidates for educational opportunity
2. Maintenance of standards, particularly in relation to the final output from the system.
3. The motivation of students is so that they are encouraged to learn.
4. Provision of feedback to students so that they know how they are performing.
5. Provision of feedback to teachers so that they know the strengths and weaknesses of their students' learning (and their teaching).

6. Preparation of the students for 'real life'.

Attributes of a Good Assessment

Van der Vleuten suggested that the utility of assessment methods could be conceptualized by looking at the five attributes of the method—reliability, validity, educational impact, feasibility, and acceptability⁷. There should be a balance between all the five criteria, rather than focus on any one of them. In the USA, the assessment of residents and medical students is largely based on a model that was developed by the Accreditation Council for Graduate Medical Education (ACGME)⁸. This model uses six areas of competence and some means of assessing them (ACGME Outcome Project 2000). These are medical knowledge, patient care (including clinical reasoning), professionalism, interpersonal and communication skills, practice-based learning and improvement (including information management), and systems-based practice (including health economics and teamwork)⁹.

Effective Student Assessment

The following guidelines provide a general framework for effective student assessment:³

1. Effective assessment requires a clear conception of all intended learning outcomes.
2. It requires a variety of assessment procedures to be used.
3. The instructional relevance of the procedures is considered.
4. It requires an adequate sample of student performance.
5. It requires that the procedures be fair to everyone.
6. The criteria for judging successful performance need to be specified.
7. It requires feedback to students that emphasizes strengths of performance and weaknesses to be corrected.
8. It must be supported by a comprehensive grading and reporting system.

Types and modes of Assessments:

Written	Oral	Practical	Integrated mode
Exams	Viva/oral exam	Lab work	Paper presentation /seminars
Class tests	Group discussion/ fishbowl technique	Computer simulation/ virtual lab	SWOC analysis
Open book exam/test	Role play	Craft work	Field assignment
Open notes exam/test	Authentic problem solving	Work experience	Poster
Self-test/online-	WSQ watch summarize the question		
Essay/article writing	End-of-class quiz		
Quizzes /objective test	Think pair share		
Class assignment	Socratic seminar		
Home assignment	KWL (know want to know to learn)		
Annotated bibliographies			
Reports			
Article review			
Journal writing			
Case studies			

Choosing The Right Tool

Ayurveda medical education apex body has prescribed examination mode and marks distribution for each stage of the program. This summative assessment is mainly by theory written exams, practical by demonstrations and vivo-voce modes. These summative modes of assessment are not sufficient for the complete assessment of a student. There are many

newer assessment modes that can be used as formative assessments. The choice of assessment should aim to deliver a maximum outcome in the teaching and learning process. There were some special assessment methods that were more effective in the assessment of different subjects in Ayurveda Medical Education. Here some were listed and discussed.

Assessment method	Subjects
OSPE with a check list	<i>Sharira Rachana</i> <i>Sharira Kriya</i> <i>(Physiology)</i> <i>RogaNidan</i> <i>Dravya Guna</i> <i>Rasashastra and bhishjakalpana</i> <i>Swastavritta</i> <i>Agada tantra</i>
OSCE- with a check list	<i>RogaNidan</i>
mCEX-mini–Clinical Evaluation Exercise	<i>kaumaryabritthya</i> <i>Streeroga and prasuti tantra</i>
CbD-Case-based Discussion	<i>Shalya tantra</i> <i>Shalakya</i>

	<i>kayachikitsa</i> <i>Panchakarma</i>
DOPS- Direct Observational Procedural Skills	<i>Panchakarma</i> <i>Shalya tantra</i> <i>Shalakya</i> <i>Kaumaryabrithya</i> <i>Streeroga and prasuti tantra</i>

OSPE and OSCE.

The objective structured clinical examination (OSCE)/ objective structured practical examination (OSPE) are methods of objectively testing the clinical and practical knowledge and skills acquired during the medical curriculum. Para clinical and pre-clinical subjects like *Sharira Rachana, ShariraKriya, RogaNidan, Dravya Guna, Rasashastra, and bhishjakalpana, Swastavritta, Agada tantra* subjects can conduct OSPE where student can demonstrate, identify, evaluate the problem according to respective subject. Dissection, identifications of muscles and bone in *Shareerarachana*, demonstration of laboratory practical in *Kriya sharrera* and *Roganidan*, demonstration of drug preparations in *Rasa shastra* and *Bhishajyakalpana*, etc can be framed using different stations in OSPE.

Pre-clinical and Clinical subjects like *RogaNidan, kaumaryabrithya, Streeroga, and prasuti tantra, Shalya tantra, Shalakya, Kayachikitsa, Panchakarma* can conduct the assessment with the use of OSCE. A systemic evolution of attitude, knowledge, interpersonal skill, communication, etc can be assessed effectively with OSCE.

Mini-clinical evaluation exercise (mCEX)

In mCEX, a faculty member watches a student-patient encounter in any healthcare setting. The encounters are intended to be relatively short, about 15 min, and the student is expected to conduct a focused history and/or physical examination during this time. Afterwards, he or she provides the assessor with a diagnosis and treatment plan, the performance is scored using a structured form, and then educational feedback is provided. Mini-clinical evaluation exercise (mCEX) is more useful in clinical teaching, training in preclinical and clinical and specialty subjects like *RogaNidan, Kaya chikitsa, Shalya tantra, Streeroga, and prasutitantra*, etc.

Case-based discussion (CbD)

Originally CbD was called Chart Stimulated Recall. In this, a discussion is held between the student and assessor. The student will present the prerecorded written case in a group in front of the assessor. After the discussion, the assessor judges the quality of the performance and then provides constructive feedback. This is more centered on the assessment of knowledge rather than the skill, and attitude of the student.

Direct observation of procedural skills (DOPS)

DOPS is a variation on the mCEX in which the assessor observes the student while he or she is performing a procedure and rates the performance and then provides feedback. In *Panchakarma* teaching procedures like *Abyanga, Swedana, Basti, Kati basti, Nasya*, etc, and surgical procedures like *Kshra sutra, Agni karma, Rakta moksha*, etc can be assessed by DOPS.

CONCLUSION

Globalization of Ayurveda, Yoga, and other ancient Indian systems was proving the acceptance of these systems in the present era. To meet the expectations of the present era standardization is required in Ayurveda medical education. Governing Apex bodies were guiding the universities and educational institutes to implement different contemporary teaching-learning methods. There is a need for sensitization of faculty to implement these guidelines. The inclusion of contemporary assessment methods in Ayurveda medical education will help us to develop a better, competent, and efficient health care professional. Choosing the right assessment according to the subject is most important which will help to assess different competencies of students. Further, there is a need for research in developing assessment methods, their reliability, and validity in Ayurveda Medical Education.

REFERENCES

1. Miller GE. The assessment of clinical skills/competence/performance. *Acad Med* 1990;**65** (9 Suppl): S63–S67.)
2. <https://openpress.usask.ca/app/uploads/sites/72/2019/12/Millers-Pyramid.jpeg>
3. <https://ncismindia.org/rulesandregulations.php>
4. <https://www.ugc.ac.in/ebook.aspx>
5. Marshall JM. Formative assessment: Mapping the road to success. A white paper Prepared for the Princeton Review. New York: The Princeton Review; 2005
6. Rowantree D. Assessing students: How shall we know them? London: Kogan; 1974.
7. van der Vleuten CPM. The assessment of professional competence: Developments, research, and practical implications. *Adv Health Sci Educ* 1996; **1**:41–67.
8. ACGME and ABMS. Toolbox of assessment methods. A product of the joint initiative of the ACGME Outcome Project of the Accreditation Council for Graduate Medical Education (ACGME), and the American Board of Medical Specialties (ABMS). Version 1.1, September 2000.
9. ACGME Outcome Project. Accreditation Council for Graduate Medical Education. Available at <http://www.acgme.org/outcome/project/proHome.asp> (accessed 14 Nov 2011).

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