

An exploratory analysis of selected textbooks enlisted by the Central Council of Indian Medicine for the Bachelor of Ayurvedic Medicine & Surgery program

Mrityunjay Dwivedi¹, Kishor Patwardhan²

¹Department of Shalya Tantra, Faculty of Ayurveda, Institute of Medical Sciences, Banaras Hindu University, Varanasi-221005.

²Department of Kriya Sharir, Faculty of Ayurveda, Institute of Medical Sciences, Banaras Hindu University, Varanasi-221005.

Corresponding Author's Email: dr.mrityunjaydwivedi@gmail.com

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Abstract

Introduction: The Central Council of Indian Medicine (CCIM), recently transformed as National Commission of Indian Systems of Medicine (NCISM) is the governing body that regulates the graduate and post-graduate education in Ayurveda in India. The present study was aimed to critically evaluate the quality of some selected textbooks enlisted by CCIM for each pre-clinical, paraclinical and clinical phases of the graduate program. This study is not based on the curriculum notified by NCISM which deals with BAMS 1st professional only.

Methods: A preliminary list of textbooks was prepared based on the list included in the CCIM curriculum & published during the last five years to ensure the availability of the most updated content. A total of eight books written in English were selected so that at least one book representing one professional program of BAMS was included. Five important aspects were considered while analyzing these textbooks: Basic information, production quality and professional outlook, content quality, presentation, and ethical issues. Both the authors of this manuscript assessed the books independently based on the criteria evolved for the purpose. The results were tabulated on a spreadsheet by both the authors concurrently.

Results: The study found that the production quality of any of the books included did not meet the expected standards. Most of them fell short of the definition of comprehensiveness. No books in our study contained recent advances in the form of references to research papers and other concerned books. Some books were found to have some ethical issues too.

Conclusion: The study suggests that there is much scope for improvement in the quality of content of these textbooks.

Keywords

Curriculum, CCIM, Ayurveda, Textbooks

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Introduction

In the current system of Ayurveda Education, the concerns pertaining to the standards of teaching, curricular content, curricular structure, heavy dependence on textbook-based teaching, lack of rigor in examination and evaluation etc. are not obscure.^{1,2,3} Several studies have reported that hands-on clinical training, standard methods of research,

and documentation skills imparted to the students of the Bachelor of Ayurvedic Medicine & Surgery (BAMS) training program are insufficient.^{4,5} Regular updation of these components is essential to maintain the rigor of training. It has been also suggested that the recent advances in the field of Ayurveda are required to be incorporated into the formal curricula.⁶

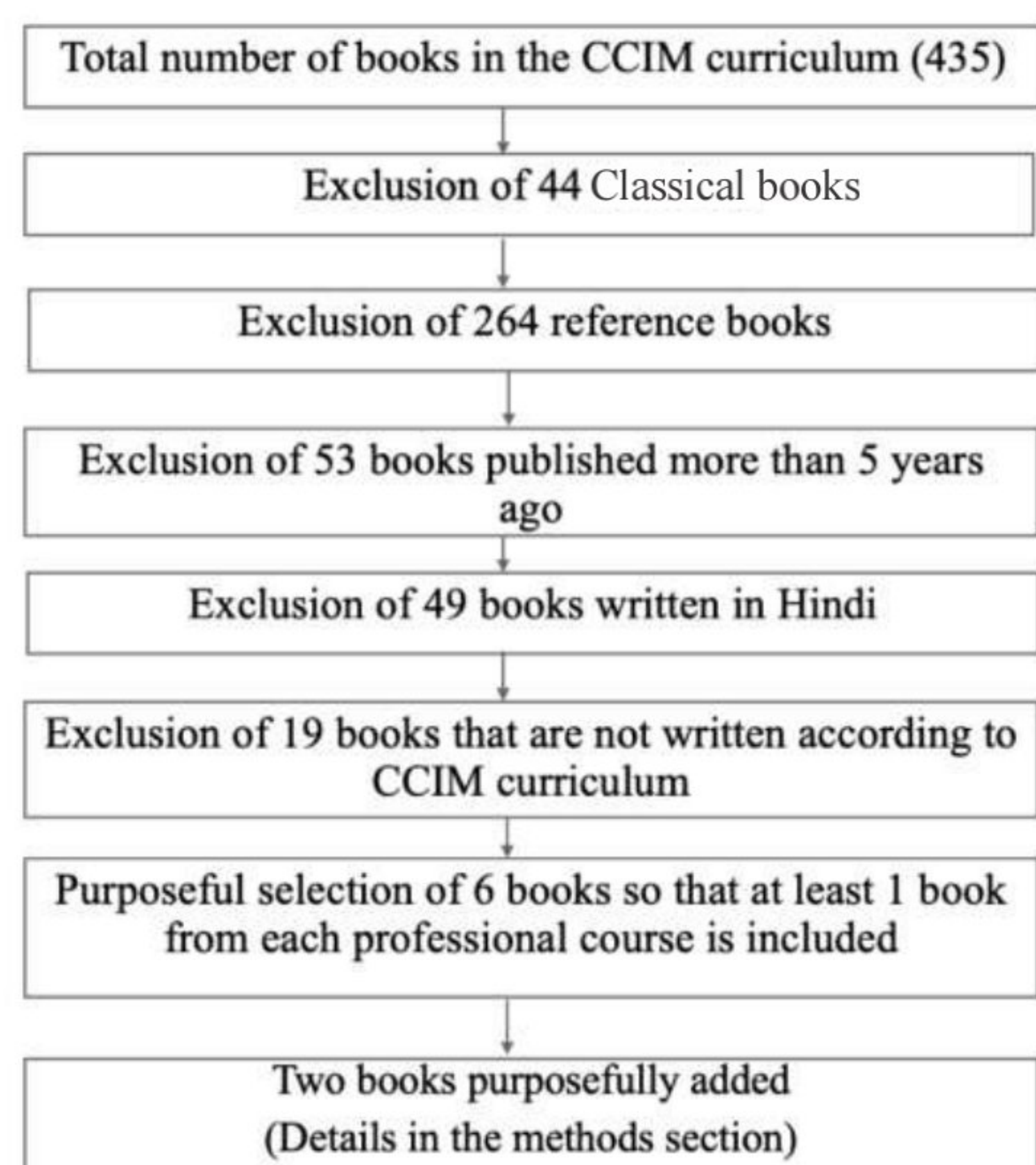
Formally enlisted textbooks play a major role in determining the quality of educational experience among the students while also helping the teachers to customize their teaching.⁷ Studies have suggested that the commonly used modern-day textbooks (not the classical textbooks such as Samhitas, Nighantus etc) in Ayurveda graduate program are not updated with the recent advances.⁸ It has also been suggested that the scholarly literature of biomedical sciences does not reach the classrooms properly because of the inclination of the students towards the textbooks that follow the formal CCIM syllabus.⁹ The content of the most of these textbooks is devoid of practical integration of contemporary medical sciences & Ayurveda.¹⁰

The Ayurvedic curriculum is also being challenged frequently for lack of practical approach therein and for incorporating too much theoretical knowledge. The published literature suggests that the qualitative evaluation of the textbooks being consulted by the students of Ayurveda programs has not yet been systematically performed. Hence, we decided to study the primary material that is being served to graduate students in the form of printed textbooks officially enlisted by the current CCIM curriculum under the “References” list.¹¹ Authors of this study evaluated a sample group of textbooks based on the following parameters: content quality, presentation, ethical aspects, production quality and professional outlook.

Material and Methods

Initially we consulted the current CCIM curriculum and prepared a list of books included under the ‘reference books’ section of each subject. Since this list includes many such books that are not written as per the prescribed syllabus (we call such books as “reference books” in this paper), we shortlisted only those books that claim to have been written ‘as per CCIM syllabus’. Since they are different from the classical books such as Samhitas/ Nighantus etc. we call them “textbooks” in this study for the purpose of clarity. To make the study relevant for a large number of users, we included only such books that

are written in English language and published during the last 5 years and hence are available in the market at present. We assumed that recently published books would contain the most updated content. Since the task of evaluating each and every textbook would be huge and beyond the scope of such a study, we purposefully selected at least one textbook each from Preclinical, Para-clinical and Clinical subjects of the BAMS program. The criterion adopted while shortlisting the textbooks was that each of these books must have been published by a national-level publishing agency as the reach of such publishing houses would be significant. Reference books written in descriptive formats or Ayurvedic *Samhitas* and other similar books containing classical literature were not a part of our study. The following subjects were arbitrarily chosen for the sake of this preliminary analysis: a. *Kriya Sharir*, b. *DravyaguGa*, c. *Rasashastra evum Bhaishajya kalpana* d. *Agada tantra*, and e. *Prasuti tantra evam striroga*. However, as we could not find textbooks fulfilling all these criteria in any of the clinical subjects, we decided to include a textbook which is written in bilingual format (Hindi and English) and is popularly consulted by the teachers and students in the subject of *Prasuti tantra evam striroga*.¹²⁻¹⁹



Both the authors of this manuscript assessed the books independently and a final consensus was arrived at after deliberate discussions wherever there were conflicting views. The results were tabulated on a spreadsheet by both the authors concurrently. We have evaluated the textbooks keeping the fact in mind that production quality and content quality are two different aspects of evaluating a book. We have ensured that there is no intermixing of these aspects in our work. We went through some of the recently published editions of the standard textbooks of biomedical disciplines to decide the criteria of evaluation. We also studied the standard guidelines issued by regulatory bodies for development of quality textbooks in India & across the world.^{29,30} Since Ayurveda is a unique discipline with its own epistemology, we decided to modify our criteria with our own observations. Finally, the following evaluation criteria were developed for this study.

Basic Information

After review of previous works on textbook evaluation, the following points were considered under this heading: a) Targeted stage of the BAMS program, b) Subject specialty (as mentioned in the latest CCIM Syllabus), c) Title of the book, d) Name(s) and number of the author(s), e) Year of Publication, f) Publisher, g) Place of Publication, h) ISBN, and i) Language.

Production Quality/ Professional Outlook

The following points were considered under this heading: a) Paper Quality, b) Size of the book, c) Complete multi-color Printing, d) Quality of illustrations/figures, e) Binding, and f) Price

Content Quality

The following points were considered under this heading: a) Comprehensiveness, b) Contemporary content, c) Integrative Approach, d) Recent Advances, e) Glossary, f) Index, g) Bibliography, h) Focus on clinical skills/ Applied aspects, and i) Completeness of the syllabus.

Comprehensiveness

Under this point, we evaluated the book to see if the explanations provided are comprehensive or not. This was

done to distinguish between elaborately explained content and the short lecture notes. The book was considered 'comprehensive' when the authors provided insights into the topics using information derived from different relevant sources along with different views and opinions. Comprehensive books contain authoritative information in the form of 'depth of a topic' and not merely 'compilation' from different resources.

Relevant contemporary content

We evaluated the books to see if the content covers only the classical Ayurveda Samhita-based material or it also includes the relevant information obtained from contemporary scientific literature.

Integrative approach

If the book provided links to Ayurveda explanations from contemporary sciences to help minimize cognitive dissonance among students, it was considered to be integrative in nature.¹⁰

Recent advances

We evaluated the books to see if the recent advances in the form of references to different recent research/ review articles published in various scholarly journals / books were included or not.

Glossary

Glossary is a list of technical terms that occur in the text along with a short explanation of the meaning. This may be present at the end of the chapter or at the end of the book.²⁰ This helps the readers to understand the technical terms in a contextualised form.

Index

Index is a list of topics that are referred to in a book and are arranged at the end in alphabetical order. This helps the readers to understand the different locations where the topic is discussed in the book.²¹

Bibliography: Bibliography is a list of books or articles that have been cross referenced in the book.²²

Focus on clinical skills/ Applied aspects

We searched for the presence of applied aspects of the subject with relatable examples from real-life situations or from clinical set-up. We searched if the book made an attempt at suggesting effective instructional methods to help acquire maximum skills (for example, Objectively Structured Clinical Examination (OSCE)/ Objectively Structured Practical Examination (OSPE) etc.

Completeness of the syllabus

We examined if the book covers the entire list of topics listed in the CCIM curriculum in all papers/ sections of the subject. Wherever the book is available in multiple volumes, all the volumes were considered for assessing the completeness.

Presentation

The following points were considered under this heading: a) Language Quality, b) Factual errors, c) Type of font of original Sanskrit verses, d) Interactive Features other than text, e) Precision in Referencing, f) Abbreviations, g) Direct interaction / Dialogue with the reader, and h) Questions / Assessment Section

Language Quality

We evaluated the language of the book for the presence of spelling / grammar-related errors. We also evaluated it to see if the language used was simple and easy to understand, or was it of high standard with a high difficulty level.

Factual errors

The evaluation was done to check if the information provided contained any factual errors or not. To do this we used a few randomly selected sections from the book.

Type of font of original Sanskrit verses

We evaluated the fonts used to write the Sanskrit verses from classical Ayurveda textbooks to check whether they were typeset in Devanagari script or were written using English fonts. We also checked if the verses were written in English script, whether the transliteration was done using diacritical marks or not. Diacritical marks when used help in avoiding mis-interpretation of the verses.

Interactive Features other than text

The inclusion of tables, figures and flow charts in the book was considered as a feature that enhances reader engagement in addition to the routine text.

Precision in Referencing

We evaluated the textbooks to see if the citation style used was standard and uniform or not.

Abbreviations

Providing a list of abbreviations along with their expanded forms in a standard practice followed while writing a book. We searched for the presence of abbreviations with their expanded forms in the books that we evaluated.

Direct interaction/ Dialogue with the reader

We evaluated whether the author has made any attempt at directing the student to make his/her learning of concepts easier by addressing him/her directly. Similarly, any direct instructions to the teachers too were searched for. (For example, the suggested activities/ project works etc.)

Questions / Assessment Section

We searched for the presence of any self-assessment section or a list of Multiple-Choice Questions (MCQs) or other assignment-based activities in the books. Since the entrance examinations for admission in post-graduate studies are structured in the form of MCQs, having this section would benefit the students.

Ethical Issues

Originality/Plagiarism

For checking the plagiarism, we used Optical Character Recognition software (OCR). Randomly a few paragraphs were chosen from textbooks & were searched for their similarity on popular search engines. We also searched for the mentioning of the license obtained by copyright owners for reproducing images / tables / texts and also tried to find out whether the material is original or is copied from the Internet/other web-based sources. We used reverse image search on popular search engines to check for the originality of the images.

Results

The results obtained have been tabulated and are given below-

Table-1 : Depicts the Basic Information related to all the books included in the study									
S. No.	Targeted Stage of BAMS Program	Subject Specialty (As written in CCIM syllabus)	Title of the book	Name(s) & number of author(s)	Year of Publication	Publisher	Place of Publication	ISBN	Language
1	1 st Professional	Kriya Sharir (Physiology in Ayurveda) ¹²	A Textbook of Kriya Sharira (Part-1)	Prof. Dr. Subhash Ranade, Prof.Dr. R.R. Deshpande, Prof. Dr. Swati Chobhe (Three)	2018	Choukham ba Sanskrit Pratishthan	Delhi	978-81-7084-353-5(1st Part) 978-81-7084-548-5(Set)	English
2	1 st Professional	Kriya Sharir (Physiology in Ayurveda) ¹³	A Textbook of Kriya Sharira (Part-2)	Prof. Dr. Subhash Ranade, Prof.Dr. R.R. Deshpande, Prof. Dr. Swati Chobhe (Three)	2018	Choukham ba Sanskrit Pratishthan	Delhi	978-81-7084-354-2(2nd Part) 978-81-7084-548-5(Set)	English
3	2 nd Professional	DravyagunaVijnana (Pharmacognosy, Pharmacodynamics, Therapeutics, Pharmacy) ¹⁴	Text Book of Dravyaguna	K.Nishteshwar	2018	Chaukham baSurbhar tiPrakashan	Varanasi	978-93-85005-01-5	English
4	2 nd Professional	Rasa Shastra &Bhaishajyakalpana (Ayurvedic Iatrochemistry & study of Medicinal formulations) ¹⁵	Bhaishajya Kalpana Vijnanam	Dr. K. Rama Chandra Reddy	2018	Chaukham bha Sanskrit Bhawan	Varanasi	978-81-89986-46-9	English
5	2 nd Professional	Rasa Shastra &Bhaishajyakalpana (Ayurvedic Iatrochemistry & study of Medicinal formulations) ¹⁶	Text Book of Rasa Sastra	Dr. K. Rama Chandra Reddy	2018	Chaukham bha Sanskrit Bhawan	Varanasi	978-81-89986-41-4	English
6	3 rd Professional	Agada Tantra, Vidhi vaidyakevumVyavaharAyurveda (Toxicology, Medical Jurisprudence & Forensic Medicine) ¹⁷	A Textbook of Agadatantra (Illustrated)	Dr. U.R. Sekhar Namburi	2018	Chaukham bha Sanskrit Sansthan, Varanasi	Varanasi	81-86937-78-1	English
7	3 rd Professional	Prasuti Tantra EvumStriRoga (Ayurvedic Gynecology and	Ayurvediya Prasuti Tantra Evam	Dr. Premvati Tiwari	2017	Chaukham bha Orientalia	Varanasi	978-81-7637-050-9 (Vol-1) and 978-81-	Hindi & English

		obstetrics) ¹⁸	StriRoga (Hindi) Prasuti Tantra					7637-049-3 (Set)	
8	3 rd Professio nal	Prasuti Tantra EvumStriRoga (Ayurvedic Gynecology and obstetrics) ¹⁹	Ayurvediya Prasuti Tantra Evam StriRoga (Hindi) StriRoga	Dr. Premvati Tiwari	2017	Chaukham bha Orientalia	Varan asi	978-81- 7637-050-9 (Vol-1) and 978-81- 7637-049-3 (Set)	Hindi & Englis h

Table-2 : Describes the production quality/ professional outlook of the books included in the study

Serial Number	Paper Quality	Size of the book	Complete multi-color Printing	Quality of illustrations/figures/images/ photographs	Binding	Price (INR)
1	Average	1/8 Demy Size	No	Black & White, Low Resolution	Paperback	275
2	Average	1/8 Demy Size	No	Black & White, Low Resolution	Paperback	300
3	Average	1/8 Demy Size	No	Black & White, Low Resolution	Paperback	500
4	Average	1/4 Crown Size	No	Multi color; Low Resolution	Paperback	595
5	Average	1/8 Demy Size	No	B/W & Multi color; Low Resolution	Paperback	495
6	Average	1/8 Demy Size	No	Black & White; Multi color; Low Resolution	Paperback	325
7	Average	1/4 Crown Size	No	Black & White, Low Resolution	Hard	450
8	Average	1/4 Crown Size	No	Black & White, Low Resolution	Hard	450

Table-3 Depicts the content quality of the books included in the study										
S. No.	Comprehensiveness	Presence of relevant Contemporary Content	Integrative approach	Recent advances	Glossary	Index	Bibliography	Focus on clinical Skills/applied aspects/practical aspects (Instructional)	Assessment methods suggested while explaining practicals/experiments (OSCE/OSPE etc.)	Completeness of the syllabus
1	Non-Comprehensive	Present	Absent / Minimal	Absent / Minimal	Absent	Absent	Absent	No/Minimal	No	Yes (Complete in two parts)
2	Non-Comprehensive	Present	Absent / Minimal	Absent / Minimal	Absent	Absent	Absent	No/Minimal	No	Yes (Complete in two parts)
3	Non-Comprehensive	Present	Absent / Minimal	Absent / Minimal	Absent	Present	Absent	No/Minimal	No	No
4	Non-Comprehensive	Present	Absent / Minimal	Absent / Minimal	Absent	Present	Absent	Yes	No	Yes (Complete in two parts)
5	Non-Comprehensive	Present	Absent / Minimal	Absent / Minimal	Absent	Present	Absent	Yes	No	Yes (Complete in two parts)
6	Non-Comprehensive	Present	Absent / Minimal	Absent / Minimal	Absent	Present	Present	No/Minimal	No	No
7	Comprehensive	Present	Present (Extensive)	Absent / Minimal	Absent	Present	Present	Yes	No	Yes (Complete in two parts)
8	Comprehensive	Present	Present (Extensive)	Absent / Minimal	Absent	Present	Present	Yes	No	Yes (Complete in two parts)

Table-4 : Depicts the presentation features of the textbooks included in the study											
S. No.	Language quality	Factual errors	Type of fonts used for Sanskrit verses and Sanskrit terms	Tables	Figures/ Drawings	Photographs	Flow Charts	Abbreviations	Interaction/Dialogue with students	Interaction/Dialogue with teachers	Questions/ Assessment Section
1	Typographical errors found	Absent/ Minimal	Devanagari Script used for verses. No diacritical marks used for Sanskrit terms.	Present	Present	Absent	Present	No	No	No	Absent
2	Typographical errors found	Absent/ Minimal	Devanagari Script used for verses. No diacritical marks used for Sanskrit terms.	Present	Present	Absent	Present	No	No	No	Absent
3	Grammatical errors and Typographical errors found	Absent/ Minimal	Devanagari Script used for verses. No diacritical marks used for Sanskrit terms.	Present	Absent	Absent	Absent	No	No	No	Absent
4	Grammatical errors and Typographical errors found	Absent/ Minimal	Devanagari Script used for verses and diacritical marks used for terms.	Present	Absent/ Minimal	Present	Absent	No	No	No	Absent
5	Typographical errors found	Absent/ Minimal	Devanagari Script used for verses and diacritical marks used for terms.	Present	Present	Present	Absent	No	No	No	Absent
6	Typographical errors found	Absent/ Minimal	Devanagari Script used for verses and diacritical marks used for terms.	Present	Present	Present	Absent	No	No	No	Absent
7	No errors found	Absent/ Minimal	Devanagari Script for verses and Diacritical marks used for terms.	Present	Present (Abundant)	Absent	Absent	Yes	No	No	Absent
8	No errors found	Absent/ Minimal	Devanagari Script for verses and Diacritical marks used for terms.	Present	Present (Abundant)	Absent	Absent	Yes	No	No	Absent

Table-5 : depicts the ethical issues considered for studying in the present work		
S. No.	Originality/Plagiarism of Text/Tables/figures/photographs	License/Citation from copyright owners for reproducing Text/Tables/figures/photographs
1	Original illustrations, Text, Table	Not applicable
2	Original illustrations, Text, Table	Not applicable
3	No illustrations/figures, Original Text, Table	Not applicable
4	Minimal copied content from internet/ other sources is found, without citing the source	Not found
5	Minimal copied content from internet/ other sources is found, without citing the source	Not found
6	Minimal copied content from internet/ other sources is found, without citing the source	Not found
7	Original illustrations, Text, Table	Not applicable
8	Original illustrations, Text, Table	Not applicable

Results

Table-1 contains the basic information about the books we studied. Two volumes out of eight were multi-authored whereas all others were single authored. These books were from five different publishers, all from India. All books bore ISBN numbers.

Table -2 shows the information about production quality/ professional Outlook. It was observed that the paper quality of all the books included in the study was average as the printed text on the opposite side of the pages was faintly visible in all books. Size of the volumes varied from [1/8 demy to 1/4 crown. None of them had complete multicolored printing, though three books contained multi-colored images. The print quality of the images in all the books was average as the resolution was mostly low. Two volumes were hard-bound and the rest of them were paperback editions. Prices ranged from INR 300 to INR 595 for different books.

Table -3 depicts the quality of the content. Only two volumes in our study met the criteria of comprehensiveness whereas all others fell under the non-comprehensive category. Though two of the volumes (listed at serial number 4 and 5) are voluminous, they fell short of the definition of comprehensiveness that we evolved. A thorough integrative approach was found only in two volumes (listed at serial number 7 and 8). No books in our study contained recent advances in the form of references to research papers and other books. No book contained a glossary and six books contained indexes. Only three volumes contained a bibliography section. Two books (listed at serial numbers 4 and 5) contained experiments/ practical applications separately in the form of laboratory practicals whereas two other books (listed at serial numbers 7 and 8) contained applied clinical aspects. However, no other book contained a significant amount of applied aspects except for the books listed at serial numbers 7 and 8. No book contained separate sections on student assessment. Two books were found

to be incomplete with reference to the syllabus as enlisted in CCIM curriculum.

Table -4 shows the presentation features of the books included in our study. We found that except for two volumes all books contained grammatical and/or typographical errors, though the factual errors were minimal in most of the books. Original *Sanskrit* verses were written in *Devanagari* script in all the volumes. Except for the three, all other books used diacritical marks while writing the *Sanskrit* terms in the body of the text. Tables were the part of every book under study. Flow charts were found in two books under the study. Only two books gave the details of abbreviations used as a separate section. No book in our study contained any sections that directly interact/ establish a dialogue with students or teachers. No book contained separate question and answer sections.

Table -5 depicts the ethical issues in the books in our study. Some copied content from the internet and other sources were found in three books where the source was not cited. Some images/illustrations were found to have been reproduced from public web pages without mentioning proper source / URLs. The license to publish obtained from the copyright holders was not mentioned in any of these books when applicable.

Discussion

Lack of good teaching resources has always been an area of concern in the context of Ayurveda education. However, the efforts put forth by the governing bodies to fill this gap have been negligible. The old popular textbooks were written by self-motivation of the authors like Murlidhara Sharma, Gananath Sena , PS Varrrier etc. They were often compelled by societal situations and not written merely for the purpose of educating the students.²

Currently, only a small number of authentic resources are available on web-based platforms. Many of the available resources are trade-driven and hence are misleading. Although attempts have been made by some of the leading universities and organizations in the form

of projects like Ayurveda Network (from Banaras Hindu University)²⁴ and AYUSH Guru (from ITRA, Jamnagar),²⁵ they are still in a budding stage. Good reading material in the form of review articles too is not available in a considerable number over reputed databases such as PubMed and Scopus. Even the popular user generated portals such as Wikipedia do not contain authentic materials related to Ayurveda. Though research in many novel areas such as Ayurgenomics, Network Pharmacology, Clinical trials, new drug design, Phytochemistry and phyto-pharmacology, etc is progressing, it has not made its presence felt in the routinely used textbooks.

As our study suggests, the quality of textbooks is not very optimistic. Some of the good textbooks available are surprisingly missing in the list included by CCIM (for example, the books listed at serial number 7 and 8 in our study). The curriculum designing is ideally a rigorous scientific process and needs to give careful consideration to the reference books being recommended while framing the curriculum. Further, textbook preparation also is a serious task that should be taken up by the governing bodies in the field such as Ayurveda as there is a lack of good reading material in this field.

Suggested Roadmap

Peer Reviewed, Multi-authored Textbooks

We suggest that to produce standard and acceptable textbooks, expert textbook committees may be formed by the CCIM/NCISM in different subjects and the authors having trustworthy credentials in the field of educational research, peer reviewed publications etc. be included in such committees. The committees may be asked to come up with multi-authored and peer-reviewed textbooks in their subjects within a reasonable timeframe. Such consensus-driven efforts would go a long way in acquiring a nation-wide acceptance is what we presume. NAMASTE portal is one such example, where consensus has been achieved & SAT (Standardized Ayurvedic Terminologies) have been published.²⁶ NIA (National Institute of Ayurveda, Jaipur) has also published a

dictionary of terminologies, which is consensus-based.²⁷

Further, a group consisting of Educationists, experts from NCERT, Ayurveda Experts, Biomedicine experts, Medical Education Technology experts, Language experts and student representatives may be framed to supervise this task of textbook preparation. This will ensure uniformity and will help in ensuring the quality content being included in the textbooks. If the publication task of such books is taken up by publishers with established credentials, the production quality and presentability will also be adhered to.

Authors with biomedical background

Relevant biomedical content of these textbooks needs to be written by the authors with an expertise in the relevant biomedical field.

E-content & Web based resources development

Standard textbooks must be published in different electronic formats too, for example, in the form of e-books to ensure that the younger generation of students can relate with. E-book development with high quality illustrations/ flow charts/ diagrams will help to cope up with the high price hurdle, handling problems etc. & will help to ensure fast delivery of knowledge (via search, keywords etc.). For this, collaborations should be made with professionals of international publishing houses. Further, there should be provision for textbooks to be made open-access with an open “suggestion for correction” for incorporating the suggestions submitted by readers. An online version of *Charaka Samhita* is a good example for this format.²⁸

Workshops / training programs for book writing

There is a need for capacity-building programs for faculty members to give them training in writing books. Many publishers do such programs to help their authors. Some journals like Journal of Ayurveda and Integrative Medicine and Annals of Ayurvedic Medicine also conduct regular workshops to promote skills of scientific writing.

31, 32

Limitations

This study is not intended to be a systematic review of the entire gamut of the textbooks available in the market, but only is an exploratory study. Hence, the number of books of different subjects included in the study is very small. This is an important limitation of the study. Further, only one textbook for each year is shortlisted for the study and the criteria for such shortlisting is based upon the publisher's national presence. There are only limited publishing houses in Ayurveda having their national presence. This is another limitation of the present study.

Conclusion

The study shows that the textbooks evaluated have several important lacunae and there is a huge scope for improvement. We suggest a few steps that governing bodies may consider taking up to address this problem including the formation of textbook committees and coming up with peer-reviewed multi-authored textbooks. There could be other models too that can be explored, however, if initiated by the governmental agencies, such efforts could be easily implemented nation-wide in a uniform manner.

Future Perspectives

To get a real view about the quality of the books, an opinion of real beneficiaries could be sought. Further, teachers who teach these subjects could be asked to evaluate different textbooks in the form of a survey, which would be a unique study in its own way.

Conflict of Interest

The senior author of this study (KP) is a member of the editorial board of AAM. However, he was not involved in the review/ editorial process of this manuscript.

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