

Enhancing competency-based dermatology and venereology education for undergraduate medical students in Burundi medical schools: A modified Delphi study

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Abstract

Background: Competency-Based Medical Education (CBME) ensures trainees progress by demonstrating mastery of specific and real-world clinical skills. However, CBME is not yet implemented in Burundi to teach dermatology and venereology course resulting in inadequate and unclear competencies for the management of common skin diseases.

Objective: To enhance dermatology and venereology competencies in the curriculum taught to undergraduate medical students in Burundi.

Methods: A modified, 2-round Delphi technique was used to develop consensus on competencies, competency assessment methods, and the curriculum stage at which the course should be delivered. A panel of 40 experts (health professions educators in 4 medical schools) rated competencies using 3 options. Items with high score in “important and very important” were validated and those with “not important” were excluded. The final round of consensus was made of 7 dermatologists and two curriculum development experts who corrected and validated the competencies to include in the enhanced curriculum.

Results: The primary literature search and focus groups identified 43 competencies distributed in 10 study domains to constitute a Delphi questionnaire. In a modified Delphi consensus round 1, the overall average ratings for the competencies were 7.44% for “Not important”, 31.16% for “Important”, and 61.40% for “Very important”. In Round 2, only one competence was not validated by seven experts out of nine (77.8%), resulting in a final curriculum comprising 42 core competencies. The experts in the final round convened on the skills and knowledge required for an undergraduate medical student in dermatology and venereology.

Conclusion

This study used a rigorous Delphi technique to identify and validate competencies for an enhanced dermatology and venereology curriculum to be taught to undergraduate medical students in Burundi. The expert panel finally defined the required skills and outlined the core components of the dermatology and venereology course.

Introduction

Medical education in Burundi has used magistral method for a long time where a professor or specialist come with syllabus, give and explain it to the students and give exam¹. Competency in medical terminology refers to an effective performance of a normal function which can be observed and encompasses various components such as knowledge, skills, values, and attitude². Competency-based medical education (CBME) steers medical students away from simply focusing on acquiring knowledge and towards applying the knowledge they have gained³.

Dermatology and Venereology training of medical students is a fundamental requirement to ensure good basic knowledge and clinical skills in future physicians. It constitutes a mandatory core course for Doctor of Medicine in East Africa Community as well as in Burundi⁴. It is a very important course as skin diseases are among a common reason which make patient to see a doctor. In Burundi medical curriculum ,Dermatology and Venereology course is taught during the tenth semester with 2 credits hours in the whole curriculum of 12 semesters⁵. It is based on acquiring knowledge to treat common skin diseases. It does not include training session in department of dermatology to have hands on skills.

Important to note is that in Burundi dermatology and venereology curriculum is not frequently updated to be able take in account the speed of evolution of medical field. A constant update to integrate new concepts such as neglected tropical diseases of skin manifestation and skin emerging viral diseases may add value to the quality of medical education.

In Burundi health system, general practitioners constitute a first level of hospital entrance, which makes the non-specialist gatekeeper of the initial assessment of skin conditions. Today's medical student population is made by the so-called Generation Z(1995–2015)⁶. That generation has grown up in the digital age, in which learning is seen as an active experience with a high level of participation.

Furthermore, they prioritize a work environment based on the latest technologies⁷, flexible working conditions and productive exchange with their employers, including regular feedback and recognition. These preferences present challenges to traditional teaching models and worsen existing ones, such as the shortcoming to provide adequate training to fulfill the objectives of undergraduate dermatology education using solely lecture-based approaches. Additional challenges include the absence of standardized tutor training and leadership development⁸, limited number of tutors⁹ and some teachers' resistance for change .

Competence is the ability of a health professional which can be observed. A competence is the measurable and observable application of knowledge, skills, values, and attitudes in a professional healthcare setting¹⁰. Unlike theoretical knowledge alone, it requires the ability to perform a specific, real-world task while meeting preset quality and safety standards. Miller's pyramid¹¹ model divides the development of clinical competence into the following four hierarchical processes; from the base to the top: knowledge, application of knowledge, clinical skills competency and clinical performance. These clinical competencies should be assessed using Miller pyramid¹². On completion of the dermatology and venereology course, the undergraduate medical student should be able to demonstrate the knowledge necessary to : be able to diagnose and treat common skin conditions; utilize this knowledge to interpret evidence, formulate simple management plans and communicate effectively; recognize and be aware of the significance of less common but important skin problems including dermatological emergencies; perform/ observe skills utilized in the field of dermatology; be aware of the psychosocial impact of skin diseases and develop a compassionate attitude towards the patients and their attendants ¹³.

Benefits of competency-based curriculum include personalized learning pace, mastery of relevant skills, increased satisfaction, flexibility in learning environments, time and cost savings, and better preparation for the workplace. Students also gain confidence from mastering competencies and receiving continuous feedback¹⁴.

Modern curriculum design and review requires diverse, evidence-based approaches. The educators and institutions often utilize several distinct models to shape their programs. The commonly used approach is Delphi Consensus Method^{15–17}. Its aim is to deal with divergent opinions or controversial issues to achieve consensus concerning real-world knowledge on a certain topic. The modified Delphi method uses an initial content panel to identify a draft set of objectives that the expert panel then rates¹⁸.

In this study, we used a modified Delphi consensus method to step by step develop an enhanced dermatology and venereology curriculum for undergraduate medical students in Burundi.

Methodology

Unlike defined criteria in qualitative and quantitative research, literature indicates there are no set standards for reporting Delphi studies in healthcare research¹⁹. To this end, a modified Delphi technique was utilized to establish a list of competencies. The Delphi procedure was preceded by two stages: the literature review and the focus group discussions.

Rapid literature review

Ahead of consensus implementation and validation, we used the preliminary rapid literature search. The primary literature search summarized the competencies that were in the existing dermatology and venereology curricula in Burundi. Further, an online search was conducted on electronic databases to identify global competencies on dermatology and venereology.

Focus group discussions

During the focus groups, we included the faculty members and medical students at the respective four medical schools to explore the experiences and perceptions on the existing dermatology and venereology competencies.

Synthesis of literature review and focus group discussions

The results from the focus group discussions gave context -specific competencies that we used to enhance the global competencies that were mapped from the literature review .The competencies that were identified from the literature search and focus group discussions were formulated using the revised Bloom's taxonomy²⁰

Delphi consensus: Round One

The first round of the Delphi consensus included 40 participants from four Burundi medical schools. The included professionals came from different medical specialities such as neurology, nephrology, infectiology, paediatrics, hepatogastroenterology, pulmonology, and cardiology); surgical specialities (orthopaedics, general surgery, urologist, gyneco-obstetrics), public health, general practitioners, and residents. The participants were clinicians or researchers teaching in medical schools, and the main reason to include them was that they have just studied dermatology and venereology course.

During the first round, a Delphi questionnaire with 43 pre-defined competencies in 10 study domains (Appendix 1) that we individually sent to 40 participants. The 10 domains were established based the similarity of the main groups of skin health problems.

For each competence, the participant had option to reply if the competency was not important, important or very important. The questionnaire had also a place to add a possible comment on the competency. Given that Supachai Chuenjitwongsa¹⁵ established a consensus threshold range of 51% to 80%, and our objective was to retain the maximum number of competencies for round two Delphi consensus, we set the minimum consensus level at 51% for both retaining and excluding any competency. The criteria to maintain a competency were “Important and very important” while “Not important” was an exclusion criterion.

Delphi consensus: Round Two

In the second round, we wanted to include the experts in dermatology and curriculum design. It included seven participants who did not participate to the first round: Burundian dermatologists, clinicians and faculty members who made their post-graduation studies in different African, European, and Asian countries, one professor specializing in university curriculum revision, and one professor expert in health professions education. They agreed on the competencies from the results of the first round to finally maintain into the competency-based dermatology and venereology curriculum for undergraduate medical students in Burundi. To be more accurate but maintaining 51–80% interval, the consensus was achieved when at least 7(77.7%) out of the 9 panellists agree or disagree on the competency¹⁵.

Data analysis

The data from literature review and focus groups were analyzed qualitatively to make a questionnaire for modified Delphi consensus. Descriptive statistics including, frequencies and mean were used to analyzed the demographic characteristics of the participants. The competencies were rated on a 3-point scale, where a competence was removed if scored an average of < 2. Furthermore, qualitative content analysis was used for the participants' comments.

Results

Demographic characteristics

The literature review and focus group discussion at the four schools of medicine in Burundi helped us to have a list of competencies to constitute a questionnaire for modified Delphi consensus.

For the first round consensus, a total of 40 experts (35% females and 65% males) from the four faculties of medicine of Burundi replied to the Delphi questionnaire. The number of participants was equal, 10(25%) for each faculty. The participants were from different specializations: 2 (5%) GP, 21(52.5%) from medical specialties, 4(10%) from public health, 8(20%) were residents, and 5 (12.5%) were from different surgical specialties (Table 1)

Table 1
Participants in Delphi consensus Round one and two

Specialisation	Number	Percentage
Round one		
General Practitioner	2	5
Medical	21	52.5
Public health	4	10
Resident	8	20
Surgical	5	12.5
Round Two		
Dermatologists	7	77.8
HPE expert	1	11.1
Curriculum development expert	1	11.1

Round One: Competencies' rating

At the first round consensus, all competencies distributed in 10 domains reached 51% for important and very important options (Table 2). The overall average rating for the competencies was 7.44% for “Not important”, 31. 16% for “Important”, and 61.40% for “Very important “.

Table 2
First round competencies rating

Competency	Not important N (%)	Important N (%)	Very important N (%)
Domain 1: Embryology and dermatological semiology			
1. Explain the embryology, structure and functions of the skin and its appendages.	0	15(37.5)	25(62.5)
2.Explain the diagnostic approach in dermatology and venereology.	0	8(20)	32(80)
3. Discuss primary and secondary skin lesions	0	6(15)	34(85)
Domain 2: Diagnostic and therapeutic approach to cutaneous infectious diseases			
4. Explain the diagnostic and therapeutic approach to bacterial dermatoses: erysipelas, folliculitis, impetigo	2(5)	8(20)	30(75)
5. Identify staphylococcus on a gram stain	1(2.5)	20(50)	19(47.5)
6. List the indications for surgical referral	0	12(30)	28(70)
7. Explain the diagnostic and therapeutic approach to dermatologic fungal infections	1(2.5)	10(25)	29(72.5)
8 Identify Candida species in fungal scrapings and KOH mount	2(5)	26(65)	12(30)
9. Explain the diagnostic and therapeutic approach to skin parasitic infestations: cutaneous larva migrans, myiasis, pediculosis, tungiasis	3(7.5)	13(32.5)	24(60)
10 .Explain the diagnostic and therapeutic approach to viral dermatoses: herpes simplex, herpes labialis, Hand, Foot, & Mouth Disease, herpes zoster ,viral warts, molluscum contagiosum	1(2.5)	10(25)	29(72.5)
11. Describe the diagnostic and therapeutic approach to the emerging viral skin diseases : covid 19, mpox, and dengue	0	16(40)	24(60)
12. Practice a Tzanck smear	14(35)	20(50)	6(15)
Domain 3. Diagnostic and therapeutic approach to inflammatory and autoimmune skin diseases.			
13. Explain the diagnostic and therapeutic approach to inflammatory skin conditions: Acne, lichen, atopic dermatitis, urticaria, erythroderma, angioedema, and eczema	3(7.5)	10(25)	27(67.5)
14. Explain the diagnostic and therapeutic approach to autoimmune skin diseases: psoriasis, SLE	2(5)	14(35)	24(60)

Competency	Not important N (%)	Important N (%)	Very important N (%)
Domain 1: Embryology and dermatological semiology			
15. Demonstrate the grattage test, dermatographism, the nikolsky ,and bulla spread signs	4(10)	11(27.5)	25(62.5)
16. Describe the clinical presentation of common vesiculobullous diseases :pemphigus, Steven Johnson syndrome ,fixed drug eruptions, bullous pemphigoid, and pemphigoid gestationis	3(7.5)	12(30)	25(62.5)
17. Discuss the therapeutic approach to common vesiculobullous diseases	3(7.5)	13(32.5)	24(60)
18. Distinguish common vesiculobullous drug reactions	3(7.5)	11(27.5)	26(65)
19. Identify the causes and treatment methods of vesiculobullous drug reactions	4(10)	17(42.5)	19(47.5)
20. Calculate the body surface area of involvement of skin lesions in vesiculobullous drug reactions	6(15)	9(22.5)	25(62.5)
Domain 4. Diagnostic and therapeutic approach to venereal diseases			
21. Explain the diagnostic and therapeutic approach to common bacterial STIs: Chlamydia, Gonorrhea, Syphilis, Trichomoniasis.	1(2.5)	10(25)	29(72.5)
22. Describe the syndromic approach to ulcerative STDs	2(5)	15(37.5)	23(57.5)
23. Explain the diagnostic and therapeutic approach to viral STIs: HIV, Genital Herpes (HSV), HPV, Hepatitis B.	2(5)	8(20)	30(75)
24. Recognize the HIV prevention, diagnosing, treatment	1(2.5)	8(20)	31(77.5)
25. Identify the psychosocial, spiritual, ethical, and legal issues related to HIV/AIDS	5(12.5)	13(32.5)	22(55)
26. Describe the dermatologic presentation and therapeutic approach of HIV/AIDS	1(2.5)	11(27.5)	28(70)
27. Identify HIV/AIDS opportunistic diseases and their treatment modalities	3(7.5)	6(15)	31(77.5)
28. Differentiate non-syphilitic STDs : chancroid, donovanosis and Lymphogranuloma venereum	6(15)	13(32.5)	21(52.5)
Domain 5. Diagnostic and therapeutic approach to skin cancer			
29. Distinguish nevus to melanoma	4(10)	13(32.5)	23(57.5)

Competency	Not important N (%)	Important N (%)	Very important N (%)
Domain 1: Embryology and dermatological semiology			
30. Describe the clinical presentation and therapeutic approach to common tumors of the skin: melanoma ,basal cell carcinoma ,squamous cell carcinoma ,and Kaposi sarcoma	4(10)	11(27.5)	25(62.5)
Domain 6. Cutaneous manifestations of systemic diseases			
31. Recognize the cutaneous features of diabetes	3(7.5)	6(15)	31(77.5)
32. Recognize the cutaneous features of hypo/hyper-thyroidism	4(10)	6(15)	30(75)
33. Identify the skin manifestations associated with covid-19, viral hepatitis	4(10)	8(20)	28(70)
Domain 7. Cutaneous manifestations of nutritional deficiencies			
34. Identify the cutaneous findings in vitamin A, B, C, E deficiency	2(5)	18(45)	20(50)
35. Describe the various skin changes in Zinc deficiency	3(7.5)	18(45)	19(47.5)
36. Propose management approach to common cutaneous manifestations of nutritional deficiencies	1(2.5)	13(32.5)	26(65)
Domain 8. Diagnostic and therapeutic approach to skin neglected tropical diseases			
37. Identify the skin neglected tropical diseases (skin NTDs)	1(2.5)	19(47.5)	20(50)
38. Describe the diagnostic and therapeutical approach to common skin NTDs	7(17.5)	17(42.5)	16(40)
39. Recognize the dapsone hypersensitivity syndrome	7(17.5)	19(47.5)	14(35)
Domain 9 .Skin Pigmentation			
40. Distinguish common skin pigmentation disorders	5(12.5)	12(30)	23(57.5)
41. Identify causes of skin pigmentations and the treatment approach	6(15)	10(25)	24(60)
Domain 10. Topical steroid abuse awareness			
42 .Categorize dermocorticosteroids	3(7.5)	14(35)	23(57.5)
43. Identify common indications, contraindications and side effects of dermocorticosteroids	1(2.5)	7(17.5)	32(80)

Competency	Not important N (%)	Important N (%)	Very important N (%)
Domain 1: Embryology and dermatological semiology			
Average	128(7.44)	536(31.16)	1056(61.40)

Round two Delphi Consensus

During the second and final round, competence 12 in domain 2, was not validated by the experts. Seven experts out of nine (77.8%) judged it not important.

The experts corrected verbs in some competencies formulation to correctly meet Bloom's taxonomy. They also convened on the minimal skills (Table 3) and knowledge (Table 4) required for an undergraduate medical student in dermatology and venereology. Furthermore, the experts proposed the learning and assessment method for the above mentioned knowledge and skills.

Table 3
Skills required for undergraduate medical student in dermatology and venereology

Title	Skill required
Slit skin smear	DOAP*
Skin biopsy	Observe on patients/simulation
Gram stain smear interpretation	Independently performed on patients
KOH examination on scrapings for fungus	Demonstrate under supervision
Dark ground illumination	Observe on patients/simulation
Tissue smear	Observe on patients/simulation
Nikolsky and bulla spread signs	Demonstrate under supervision
Grattage test	DOAP
Body surface area involved of skin lesions	Independently performed on patients
Dermographism	Observe on patients
Dermocorticosteroids	DOAP

***DOAP: Demonstrate, Observe, Assist, and Perform**

Table 4
Knowledge required for undergraduate in dermatology and venereology

Knowledge	Learning Method	Assessment Method
1. Explain the embryology, structure and functions of the skin and its appendages.	Lecture/ Small group discussion	Written/Viva voce
2. Explain the diagnostic approach in dermatology and venereology.	Lecture/ Small group discussion	Written/Viva voce
3. Discuss primary and secondary skin lesions	Lecture/ Small group discussion	Written/Viva voce
4. Explain the diagnostic and therapeutic approach to bacterial dermatoses: erysipelas, folliculitis, impetigo	Lecture/ Small group discussion	Written/Viva voce
5. List the indications for surgical referral	Lecture/small group discussion	Written/Viva voce
6. Explain the diagnostic and therapeutic approach to dermatologic fungal infections	Lecture/ Small group discussion	Written/Viva voce
7. Explain the diagnostic and therapeutic approach to skin parasitic infestations: cutaneous larva migrans, myiasis, pediculosis, tungiasis	Lecture/ Small group discussion	Written/Viva voce
8. Explain the diagnostic and therapeutic approach to viral dermatoses: herpes simplex, herpes labialis, Hand, Foot, & Mouth Disease, herpes zoster, viral warts, molluscum contagiosum	Lecture/ Small group discussion	Written/Viva voce
9. Describe the diagnostic and therapeutic approach to the emerging viral skin diseases : covid 19, mpox, and dengue	Lecture/ Small group discussion	Written/Viva voce
10. Explain the diagnostic and therapeutic approach to inflammatory skin conditions: Acne, lichen, atopic dermatitis, urticaria, erythroderma, angioedema, and eczema	Lecture/ Small group discussion	Written/Viva voce
11. Explain the diagnostic and therapeutic approach to autoimmune skin diseases: psoriasis, SLE	Lecture/ Small group discussion	Written/Viva voce
12. Describe the clinical presentation of common vesiculobullous diseases : pemphigus, Steven Johnson syndrome, fixed drug eruptions, bullous pemphigoid, and pemphigoid gestationis	Lecture/ Small group discussion	Written/Viva voce
13. Discuss the therapeutic approach to common vesiculobullous diseases	Lecture/ Small group discussion	Written/Viva voce
14. Distinguish common vesiculobullous drug reactions	DOAP/Bedside clinic	Written/Viva voce/Bedside clinic

Knowledge	Learning Method	Assessment Method
15. Identify the causes and treatment methods of vesiculobullous drug reactions	Lecture/ Small group discussion	Written/Viva voce
16. Explain the diagnostic and therapeutic approach to common bacterial STIs: Chlamydia, Gonorrhea, Syphilis, Trichomoniasis.	Lecture/ Small group discussion	Written/Viva voce
17. Describe the syndromic approach to ulcerative STDs	Lecture/ Small group discussion	Written/Viva voce
18. Explain the diagnostic and therapeutic approach to viral STIs: HIV, Genital Herpes (HSV), HPV, Hepatitis B.	Lecture/ Small group discussion	Written/Viva voce
19. Recognize the HIV prevention, diagnosing, treatment	Lecture/ Small group discussion	Written/Viva voce
20. Identify the psychosocial, spiritual, ethical, and legal issues related to HIV/AIDS	Lecture/ Small group discussion	Written/Viva voce
21. Describe the dermatologic presentation and therapeutic approach of HIV/AIDS	Lecture/ Small group discussion	Written/Viva voce
22. Identify HIV/AIDS opportunistic diseases and their treatment modalities	Lecture/ Small group discussion	Written/Viva voce
23. Differentiate non-syphilitic STDs : chancroid, donovanosis and Lymphogranuloma venereum	Lecture/ Bedside clinic	Written/Viva voce
24. Distinguish nevus to melanoma	DOAP	Bedside clinic
25. Describe the clinical presentation and therapeutic approach to common tumors of the skin: melanoma ,basal cell carcinoma ,squamous cell carcinoma ,and Kaposi sarcoma	Lecture/ Small group discussion	Written/Viva voce
26. Recognize the cutaneous features of diabetes	DOAP/Bedside clinic	Bedside clinic
27. Recognize the cutaneous features of hypo/hyper-thyroidism	Lecture/ Small group discussion	Bedside clinic
28. Identify the skin manifestations associated with covid-19, viral hepatitis	Lecture/ Small group discussion/Bedside clinic	Written/Viva voce
29. Identify the cutaneous findings in vitamin A, B, C, E deficiency	Lecture/ Small group discussion/Bedside clinic	Written/Viva voce/Bedside clinic
30. Describe the various skin changes in Zinc deficiency	Lecture/ Small group discussion	Written/Bedside clinic
31. Propose management approach to common cutaneous manifestations of nutritional deficiencies	Lecture/ Small group discussion	Written/Viva voce

Knowledge	Learning Method	Assessment Method
32. Identify the skin neglected tropical diseases (skin NTDs)	Lecture/ bedside clinic	Bedside clinic
33. Describe the diagnostic and therapeutical approach to common skin NTDs	Lecture/ Small group discussion	Written/Viva voce
34. Recognize the dapsone hypersensitivity syndrome	Lecture/ bedside clinic	Bedside clinic
35. Distinguish common skin pigmentation disorders	Bedside clinic	Bedside clinic
36. Identify causes of skin pigmentations and the treatment approach	Lecture/ Small group discussion	Written/Viva voce
37. Identify common indications, contraindications and side effects of dermocorticosteroids	Lecture/ Small group discussion	Written/Viva voce

Discussion

In this study, we developed an enhanced dermatology and venereology curriculum for undergraduate medical students in Burundi using a modified Delphi consensus. Many types of curriculum are followed by medical institutions^{21,22}. The most common models include traditional discipline-based, system-integrated, and competency-based curricula. These structures heavily dictate when students interact with patients and how basic sciences are taught. The traditional (discipline-based) curriculum focuses on deep theoretical grounding in individual subjects prior to hospital exposure. The integrated (System-Based) Curriculum organizes learning around specific human organ systems (e.g., cardiovascular, respiratory) rather than standalone subjects. It is used to teach the anatomy, pathology, and clinical management of a system simultaneously to emphasize real-world relevance and early clinical skills. The CBME focuses on specific learning outcomes and practical abilities. It ensures learners master concrete, measurable competencies (like communication, ethical practice, and medical procedures) rather than just accumulating classroom time²³. CBME is likely the earliest form of curriculum, and it offers many advantages, including the following: a) It clarifies core priorities and makes performance expectations more explicit. b) It highlights the need for improved assessment practices and tools. c) Competency-based undergraduate medical education can benefit from adopting a competency-focused framework with clear expectations and structured assessments. However, educators must exercise caution to avoid breaking clinical practice down into overly fragmented individual competencies, or prioritizing only those competencies that are simple to define and evaluate²⁴.

This study identified core dermatology and venereology competencies that the medical health professions educators in general and specialized dermatologists alike believe should be mastered by Burundian undergraduate medical students. The modified Delphi process provided a structured format

for specialists and other health professions educators to come to consensus on the proposed competencies, with 42 out of 43 validated. In addition to defining the required skills, the modified Delphi consensus helped participants outline the core components of the dermatology and venereology course, including the course title, teaching duration, competency assessment methods, and the curriculum stage at which the course should be delivered. The skills defined are comparable to those in other countries where CBME is implemented, yet the validated competencies differ noticeably from those identified elsewhere^{3,25}. This may be due to geographical conditions where in Burundi, a country located in tropical region, a special interest should be on infectious and skin related neglected tropical diseases.

Strength and limitations

To our knowledge, this study focusing on competency-based method in medical teaching is the first of its kind conducted in Burundi. The study will serve as reference to the other medical educators in the adoption and implementation of CBME, in their teaching.

Although our study strictly followed the Delphi consensus methodology, it still has several limitations. The first limitation stems from the Delphi method itself. There is no standardized protocol for selecting experts in Delphi studies^{19,26}. Being a medical school educator was set as a selection criterion for our panel. Since all medical schools in Burundi are located in the capital, Bujumbura, all panel members were from urban areas. This may bias their experience of common skin conditions, which differ notably from those seen in rural regions. While our sample size aligns with typical standards for Delphi research, it was still too small to reliably identify variations in opinions among panel members. This constraint was unavoidable in the final round, as only six dermatologists practice across Burundi.

Conclusion

CBME is one of the best educational methods to ensure future doctors progress by demonstrating mastery of specific and real-world clinical skills. This study used a rigorous Delphi technique to identify and validate competencies for an enhanced dermatology and venereology curriculum to be taught to undergraduate medical students in Burundi. The experts' panel finally defined the required skills and outlined the core components of the dermatology and venereology course.

Declarations

Ethics approval and consent to participate

For primary data search, we applied and obtained the ethical approval from University of Burundi, School of Medicine review board (CIEB-FMCHUK No 21/08/2025). For the Delphi consensus, we applied the concept of "quasi-anonymity", which allowed us to know the identity of each participant. However, no one participant could know the response or comment of the other participant. All participants to the primary

search and Delphi consensus contributed voluntarily and provided informed consent to participate to the study. We conducted the study in accordance with the Declaration of Helsinki.

Consent for publication

Not applicable

Availability of data and materials

The datasets used and/or analysed during the current study are available from the corresponding author on reasonable request.

Competing interests

No conflicts of interest exist between the authors

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Authors' contributions

EN designed the work, analysed and interpreted the data, and wrote the manuscript. AK designed data collection tool and supervised data collection. MK contributed in data analyses . JCM, DN, D M, YI, and ON contributed in manuscript writing and revision. TWS supervised all activities related to this manuscript. All authors read and approved the final manuscript.

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