

ABSTRAK

Latar belakang : Sirkumsisi merupakan keterampilan klinis level 4A dalam Standar Kompetensi Dokter Indonesia yang wajib dikuasai setiap lulusan dokter, namun pembelajarannya masih terkendala keterbatasan manekin dengan realisme anatomi dan fungsional yang memadai sehingga latihan prosedural belum sepenuhnya aman, terstandar, dan bermakna bagi mahasiswa kedokteran.

Tujuan : Penelitian ini bertujuan menganalisis kebutuhan desain manekin sirkumsisi yang realistis sebagai sumber belajar yang efektif, dengan menggali perspektif mahasiswa, dosen, instruktur, pakar, dan laboran yang terlibat dalam pembelajaran sirkumsisi.

Metode : Rancangan penelitian yang digunakan adalah *convergent parallel mixed-methods*; data kuantitatif dikumpulkan melalui kuesioner *Likert* pada 214 mahasiswa tahun ketiga dan keempat di Fakultas Kedokteran Universitas Islam Al-Azhar Mataram (*total sampling*) dan dianalisis secara deskriptif, sedangkan data kualitatif diperoleh dari wawancara mendalam semi-terstruktur, observasi non-partisipan, dan telaah dokumen terhadap dosen, instruktur/pakar, dan laboran yang dipilih secara *purposive* dan dianalisis secara tematik.

Hasil : Mahasiswa menilai manekin yang digunakan saat ini cukup membantu, tetapi menempatkan kebutuhan peningkatan realisme desain pada tingkat kepentingan tinggi, terutama terkait realisme anatomi (elastisitas kulit, variasi *preputium*, lapisan mukosa-kulit, representasi vaskular), realisme fungsional (resistensi jaringan, simulasi perdarahan, latihan penatalaksanaan komplikasi), serta fitur interaktif berupa umpan balik objektif; analisis kualitatif merangkum kebutuhan akan anatomi yang akurat, simulasi fungsional untuk latihan berulang, integrasi dengan pasien standar, serta aspek ekonomis, durabilitas, dan portabilitas.

Kesimpulan : Kebutuhan kuat terhadap pengembangan manekin sirkumsisi ber-*fidelity* tinggi yang mengintegrasikan realisme anatomi, fungsional, dan skenario komunikasi dengan tetap mempertimbangkan kemudahan penggunaan dan efisiensi biaya, sehingga cetak biru desain yang dihasilkan dapat menjadi landasan perancangan *prototipe* generasi berikutnya dan berkontribusi pada peningkatan mutu pembelajaran keterampilan klinis di pendidikan kedokteran.

Kata kunci : sirkumsisi, manekin realistis, simulasi klinis, *mixed-methods*, laboratorium keterampilan klinis, pendidikan kedokteran.

ABSTRACT

Background : Circumcision is a level-4A clinical skill in the Indonesian Doctors Competency Standards that must be mastered by all medical graduates, yet its teaching is still limited by the lack of training manikins with sufficient anatomical and functional realism, so that procedural practice is not fully safe, standardized, and meaningful for medical students.

Objective : This study aimed to analyse the design requirements for a realistic circumcision manikin as an effective learning resource, by exploring the perspectives of students, lecturers, instructors, experts, and skills-lab staff involved in circumcision training.

Methods : A convergent parallel mixed-methods design was employed. Quantitative data were collected using a Likert-scale questionnaire administered to 214 third- and fourth-year medical students at the Faculty of Medicine, Universitas Islam Al-Azhar Mataram (total sampling) and analysed descriptively. Qualitative data were obtained through semi-structured in-depth interviews, non-participant observations, and document review involving purposively selected lecturers, instructors/experts, and laboratory staff, and were analysed thematically.

Results : Students perceived the currently available manikin as helpful, but rated the need to improve design realism as highly important, particularly in terms of anatomical realism (skin elasticity, preputial variation, mucosa–skin layers, and vascular representation), functional realism (tissue resistance during incision and suturing, simulated bleeding, and practice of complication management), and interactive features providing objective feedback. The qualitative analysis highlighted the need for accurate anatomy, functional simulation that enables repeated practice of critical technical skills, integration with standardized patients, and attention to cost-effectiveness, durability, and portability aspect.

Conclusion : There is a strong need to develop a high-fidelity circumcision manikin that integrates anatomical, functional, and communication realism while maintaining ease of use and cost efficiency. The resulting design blueprint can serve as a foundation for the development of next-generation prototypes and is expected to contribute to improving the quality of clinical skills training in medical education.

Keywords : circumcision, realistic manikin, clinical simulation, mixed-methods, clinical skills laboratory, medical education



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Analisis Kebutuhan Desain Manekin Sirkumsisi yang Realistis Sebagai Sumber Belajar Mahasiswa Kedokteran Tahap Preklinik di Laboratorium Keterampilan Klinis

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Universitas Gadjah Mada, 2026 | Diunduh dari <http://etd.repository.ugm.ac.id/>