

ABSTRACT

Background: Asthma management requires continuous care, yet pharmacist-led asthma services in Indonesia have not been systematically designed according to patients' preferences. This study aimed to identify adult patients' preferences, quantify preference trade-offs and heterogeneity, and translate the findings into a patient-centred telepharmacy prototype.

Methods: A sequential quantitative study with expert validation was conducted among 515 patients in the Special Region of Yogyakarta and selected Central Java areas. A DCE evaluated six attributes: frequency of pharmacist follow-up, access to pharmacists, counselling type, symptom-free days, medication side-effect risk, and out-of-pocket cost. Data were analysed using conditional logit modelling, relative attribute importance (RAI), and subgroup analyses. Self-reported willingness to pay was assessed. Findings were translated into a conceptual pharmacist-led asthma prototype comprising a structured workflow and digital interface, followed by expert review.

Results: All non-cost attributes significantly influenced patient choices ($p < 0.001$). Comprehensive asthma management generated the largest positive utility ($\beta = 10.30$; 95% CI: 7.63–12.97), while less frequent follow-up and restricted pharmacist access were less preferred. RAI ranked medication side-effect risk highest (46.8%), followed by counselling type (25.2%), follow-up frequency (13.5%), pharmacist access (11.5%), and symptom-free days (3.0%); cost was not estimable. These findings indicate trade-offs among service quality, access, clinical outcomes, and medication safety. Preference directions were broadly consistent across sex, educational attainment, and asthma duration, with no substantial subgroup-specific reversal. Most respondents (79.0%) were willing to pay $\leq$ IDR 25,000 per visit. Findings were translated into a prototype prioritising medication safety, comprehensive counselling, regular follow-up, convenient pharmacist access, symptom monitoring, and affordability. Expert review supported its coherence and informed refinements to documentation, referral guidance, educational content, and interface navigation. The prototype remains conceptual and has not been evaluated for usability or clinical effectiveness

Keywords: Asthma; Patient preferences; Discrete choice experiment; Pharmacist-led intervention; Service prototype

INTISARI

Latar Belakang: Pengelolaan asma memerlukan pengobatan yang berkesinambungan, tetapi layanan asma yang dipimpin apoteker di Indonesia belum banyak dikembangkan berdasarkan preferensi pasien. Penelitian ini bertujuan mengidentifikasi preferensi pasien asma dewasa, mengukur variasi preferensi, dan mengembangkan prototipe layanan telefarmasi yang berpusat pada pasien.

Metode: Penelitian kuantitatif dengan validasi ahli yang dilakukan pada 515 pasien di Daerah Istimewa Yogyakarta dan beberapa wilayah di Jawa Tengah. Preferensi pasien dievaluasi menggunakan *Discrete Choice Experiment* (DCE) dengan enam atribut, yaitu frekuensi tindak lanjut apoteker, akses terhadap apoteker, jenis konseling, hari bebas gejala, risiko efek samping obat, dan biaya. Data dianalisis menggunakan *conditional logit*, *relative attribute importance* (RAI), dan analisis subkelompok. *Willingness to Pay* dinilai berdasarkan laporan yang diberikan langsung oleh pasien. Temuan penelitian kemudian digunakan untuk mengembangkan prototipe konseptual layanan telefarmasi yang kemudian divalidasi oleh ahli.

Hasil: Seluruh atribut selain biaya berpengaruh signifikan terhadap pilihan pasien ($p < 0,001$). Konseling secara komprehensif memberikan utilitas positif terbesar ($\beta = 10,30$; 95% CI: 7,63–12,97). Risiko efek samping obat merupakan atribut paling penting (RAI=46,8%), diikuti jenis konseling (25,2%), frekuensi tindak lanjut (13,5%), akses terhadap apoteker (11,5%), dan hari bebas gejala (3,0%). Sebanyak 79,0% pasien bersedia membayar $\leq$ Rp25.000 per kunjungan. Pola preferensi secara umum serupa berdasarkan jenis kelamin, pendidikan, dan durasi asma. Prototipe yang dikembangkan menekankan keamanan penggunaan obat, konseling secara komprehensif, tindak lanjut yang berkala, kemudahan akses terhadap apoteker, dan pemantauan gejala. Validasi oleh ahli menunjukkan alur layanan telah sesuai dengan masukan tambahan untuk penyempurnaan dokumentasi, panduan rujukan, materi edukasi yang lebih mudah, dan memperjelas navigasi *interface* pada prototipe.

Kata Kunci: Asma; Preferensi pasien; Discrete Choice Experiment; Intervensi oleh Apoteker; Prototipe Layanan