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ABSTRAK

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Inovasi Pembuatan Tas ASI *Transportable* Dual Fungsi “UMASI”

Pendahuluan: Air Susu Ibu (ASI) merupakan sumber nutrisi utama yang direkomendasikan secara eksklusif selama enam bulan pertama kehidupan bayi. Kendala yang dihadapi ibu menyusui, khususnya dalam penyimpanan dan penghangatan ASI perah saat bekerja atau bepergian, sering menjadi penghambat pemberian ASI eksklusif. Penelitian ini bertujuan menciptakan Tas ASI *Transportable* Dual Fungsi “UMASI” yang mengintegrasikan fitur pendingin dan penghangat dalam satu desain praktis

Metode: Metode penelitian menggunakan pendekatan *Research and Development* (R&D) model ADDIE (*Analysis, Design, Development, Implementation, Evaluation*) dengan tahapan analisis kebutuhan, perancangan desain, pengembangan prototipe, implementasi uji fungsi, dan evaluasi hasil.

Hasil: Tercipta Tas ASI *Transportable* Dual Fungsi “UMASI” yang dapat mengintegrasikan fitur pendingin dan penghangat dalam satu desain praktis. Prototipe dibuat dari bahan Oscar dengan lapisan *Polyvinyl Chloride* (PVC), dilengkapi kompartemen pendingin menggunakan *ice pack/ice gel* serta penghangat elektrik berbasis termoelektrik. Hasil uji menunjukkan fungsi pendingin mampu mempertahankan suhu ASI beku di bawah 10°C selama ± 6 jam, sementara fungsi penghangat dapat menaikkan suhu ASI hingga 36–37°C sesuai suhu fisiologis ideal untuk konsumsi bayi.

Simpulan: Tas ASI *Transportable* Dual Fungsi “UMASI” berpotensi dikembangkan lebih lanjut melalui penambahan fitur digital sensor suhu dan uji kualitas nutrisi agar lebih optimal sebagai inovasi keperawatan berbasis teknologi.

Kata Kunci: ASI perah, tas ASI, pendingin, penghangat elektrik, inovasi keperawatan

ABSTRACT

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The Innovation in the Development of a Dual-Function Transportable Breast Milk Bag “UMASI”

Introduction: Breast milk is the primary source of nutrition recommended exclusively for the first six months of an infant's life. One of the main challenges faced by breastfeeding mothers, particularly in storing and warming expressed breast milk while working or traveling, often hinders the practice of exclusive breastfeeding. This study aims to develop a dual-function transportable breast milk bag, "UMASI", which integrates both cooling and warming features in a practical design.

Method: The research employed a Research and Development (R&D) approach using the ADDIE model (Analysis, Design, Development, Implementation, Evaluation), which includes the stages of needs analysis, design planning, prototype development, implementation of functional testing, and outcome evaluation.

Results: The study successfully produced a dual-function transportable breast milk bag, "UMASI", which integrates cooling and warming features in a single practical design. The prototype is made of Oscar material with a Polyvinyl Chloride (PVC) lining, equipped with a cooling compartment using ice packs/ice gel and an electric warmer based on thermoelectric technology. Testing results showed that the cooling function can maintain frozen breast milk at temperatures below 10°C for approximately 6 hours, while the warming function can raise the milk temperature to 36–37°C, aligning with the ideal physiological temperature for infant consumption.

Conclusion: The dual-function transportable breast milk bag, "UMASI", has the potential for further development through the addition of digital temperature sensors and nutritional quality testing to optimize its function as a technology-based nursing innovation.

Keywords: *Expressed breast milk, breast milk bag, cooling, electric warmer, nursing innovation*