

**PROGRAM STUDI S1 KESEHATAN MASYARAKAT
FAKULTAS KESEHATAN DAN INFORMATIKA
INSTITUT KESEHATAN PAYUNG NEGERI PEKANBARU**

Penelitian, 08 Mei 2026

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**Analisis Efektivitas Simulasi APAR Terhadap Peningkatan Kesiapsiagaan
Pegawai Balai Laboratorium Kesehatan Masyarakat Batam Dalam
Menghadapi Kebakaran.**

xii + 52 Halaman + 13 Tabel + 20 Lampiran

ABSTRAK

Kebakaran di lingkungan laboratorium kesehatan merupakan salah satu bentuk kedaruratan yang bisa menimbulkan kerugian besar, sehingga kesiapsiagaan pegawai dalam menghadapi kejadian tersebut menjadi sangat penting. Penelitian ini bertujuan untuk menilai efektivitas simulasi penggunaan Alat Pemadam Api Ringan (APAR) terhadap peningkatan kesiapsiagaan pegawai Balai Laboratorium Kesehatan Masyarakat Batam dalam menghadapi kebakaran yang diukur melalui kerangka *Knowledge, Attitude, Practice* (KAP). Penelitian menggunakan desain pre-eksperimental dengan rancangan *one group pretest–posttest* pada 40 pegawai yang memenuhi kriteria inklusi. Kesiapsiagaan diukur menggunakan kuesioner pengetahuan dan sikap, serta lembar observasi keterampilan penggunaan APAR, yang seluruhnya dikonversi ke skala 0–100 dan digabungkan menjadi indeks kesiapsiagaan komposit tiap responden. Data dianalisis secara deskriptif dan inferensial menggunakan uji reliabilitas antar observer (*Intraclass Correlation Coefficient*), uji normalitas *Shapiro–Wilk*, uji *Paired Sample t-test*, perhitungan *effect size Cohen's d*, analisis efektivitas berdasarkan persentase peningkatan, serta kategorisasi indeks kesiapsiagaan. Hasil ICC menunjukkan *Excelent Reliability*, uji *Paired Sample t-test* menunjukkan perbedaan yang signifikan antara kesiapsiagaan sebelum dan sesudah simulasi ($p < 0,001$), sedangkan nilai *Cohen's d* sebesar 2,856 menunjukkan bahwa simulasi APAR memberikan pengaruh yang sangat besar terhadap peningkatan kesiapsiagaan. Persentase peningkatan sebesar 32,15% menempatkan simulasi APAR dalam kategori “Cukup Efektif”. Status indeks kesiapsiagaan sebelum simulasi yaitu pegawai berada pada kategori “Cukup Siap”, dengan indeks rata-rata yang mencerminkan masih adanya keterbatasan pengetahuan, sikap, dan keterampilan praktik penggunaan APAR. Namun setelah pelaksanaan intervensi berupa simulasi penggunaan APAR, terjadi peningkatan indeks kesiapsiagaan yang nyata, dengan mayoritas pegawai berpindah ke kategori “Siap”. Secara keseluruhan, hasil tersebut menunjukkan bahwa simulasi penggunaan APAR tidak hanya signifikan secara statistik, tetapi juga bermakna secara praktis dalam meningkatkan kesiapsiagaan pegawai Balai Laboratorium Kesehatan Masyarakat Batam dalam menghadapi bahaya kebakaran.

Kata Kunci : Simulasi APAR, Kesiapsiagaan Kebakaran, APAR, KAP (Pengetahuan, Sikap, Keterampilan), K3 Laboratorium Kesehatan.

Daftar Bacaan : 47 (1980–2025)

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Analysis of the Effectiveness of Fire Extinguisher Simulation on Improving the Preparedness of Employees at the Batam Public Health Laboratory Center in Facing Fire Emergencies.

xii + 52 Pages + 13 Tables + 20 Attachments

ABSTRACT

Fires in health laboratory settings are critical emergencies that can cause substantial harm, making staff preparedness essential for a safe and effective response. This study aimed to evaluate the effectiveness of a fire extinguisher simulation in improving the fire preparedness of staff at the Batam Public Health Laboratory Center, using the Knowledge, Attitude, Practice (KAP) framework as the basis for measurement. A pre-experimental one-group pretest–posttest design was applied to 40 employees who met the inclusion criteria. Preparedness was assessed using a knowledge questionnaire, an attitude questionnaire, and an observation checklist for fire extinguisher handling skills; all scores were converted to a 0–100 scale and combined into a composite preparedness index for each respondent. Data were analyzed descriptively and inferentially using interrater reliability (Intraclass Correlation Coefficient), the Shapiro–Wilk normality test, paired sample t-test, Cohen’s d effect size, an effectiveness analysis based on percentage increase, and categorization of the preparedness index. The ICC indicated excellent agreement between observers, and the paired sample t-test showed a statistically significant difference in preparedness before and after the simulation ($p < 0.001$), while Cohen’s d of 2.856 demonstrated a very large effect of the APAR simulation on preparedness. The average percentage increase of 32.15% classified the simulation as “moderately effective” according to the criteria used in this study. Before the intervention, most staff were categorized as “fairly prepared”, reflecting persistent limitations in knowledge, attitudes, and practical fire extinguisher skills. After the simulation, the preparedness index increased markedly, with the majority of staff shifting into the “prepared” category. Overall, these findings indicate that fire extinguisher simulation training is not only statistically significant but also practically meaningful in enhancing the fire preparedness of staff at the Batam Public Health Laboratory Center.

Keywords : Fire Extinguisher Simulation, Fire Preparedness, Fire Extinguisher, KAP (Knowledge, Attitude, Practice), Occupational Health and Safety Laboratory.

References : 47 (1980–2025)