

**Pemantauan Ibu Hamil Menggunakan Aplikasi *Mobile REST (Risk identification, Evaluation counseling, Systematic monitoring, Troubleshooting): Cluster Randomized Controlled Trial***

**INTISARI**

**Latar Belakang:** Angka Kematian Ibu (AKI) di Indonesia masih cukup tinggi dan belum mencapai target nasional. Keberhasilan program kesehatan ibu dapat dinilai melalui indikator utama Angka Kematian Ibu. Pemantauan kehamilan merupakan salah satu upaya untuk menurunkan terjadinya peningkatan Angka Kematian Ibu. Berkembangnya ilmu teknologi dan informasi membuat kegiatan yang biasa dilakukan secara manual dapat diintegrasikan secara digital dalam pemantauan kehamilan.

**Tujuan:** Mengetahui efektivitas pemantauan kehamilan menggunakan aplikasi *mobile REST* dibandingkan dengan menggunakan pelayanan standar.

**Metode:** Penelitian ini menggunakan rancangan *Cluster Randomized Controlled Trial*, dengan melibatkan ibu hamil di Kabupaten Purworejo yang terbagi menjadi 11 klaster pada kelompok intervensi dan 11 klaster pada kelompok kontrol. Program pendampingan meliputi penggunaan aplikasi *mobile REST* dengan mengintegrasikan 10T pemeriksaan kehamilan. Responden yang direkrut sebanyak 220 (22 klaster) dan yang mengikuti sampai dengan akhir penelitian 217 responden. Pengumpulan data meliputi karakteristik responden, jumlah kunjungan antenatal (ANC), metode persalinan, kejadian komplikasi persalinan, dan berat badan lahir bayi. Analisis dilakukan secara bivariat menggunakan *bivariate logistic regression* untuk menilai hubungan antara setiap variabel independen dan hasil, serta multivariat menggunakan *multilevel mixed-effects logistic regression* untuk menyesuaikan dengan kemungkinan efek pada level klaster.

**Hasil:** Hasil penelitian yang didapatkan yaitu penggunaan aplikasi *mobile REST* untuk pemantauan kehamilan dapat meningkatkan kemungkinan jumlah minimal kunjungan ANC  $\geq 6$  kali 3,65 kali dibandingkan pada kelompok kontrol (OR = 3,65, 95% CI = 1,77 – 7,53,  $p < 0,001$ ). Pada kelompok intervensi memiliki kemungkinan 3,65 kali melahirkan dengan metode normal dibandingkan pada kelompok kontrol (OR = 3,65, 95%CI = 2,07 – 6,36,  $p < 0,001$ ). Kemungkinan untuk tidak terjadi komplikasi pada kelompok intervensi 4,18 kali dibandingkan dengan kelompok kontrol (OR = 4,18, 95%CI = 2,26 – 7,71,  $p < 0,001$ ). Berat badan lahir bayi mencapai  $\geq 2500$  gram pada kelompok intervensi memiliki kemungkinan 3,15 kali dibandingkan pada kelompok kontrol (OR = 3,15, 95%CI = 1,67 – 5,95,  $p < 0,001$ ). Hasil penelitian tersebut signifikan secara statistik dengan nilai  $p < 0,05$ .

**Kesimpulan:** Pemantauan kehamilan menggunakan aplikasi *mobile REST* memiliki pengaruh yang signifikan terhadap jumlah kunjungan ANC  $\geq 6$  kali, pencegahan komplikasi persalinan, metode persalinan normal, dan berat badan lahir bayi  $\geq 2500$  gram.

**Kata kunci:** pemantauan kehamilan, aplikasi *mobile*, *Antenatal Care*, kesehatan ibu dan anak, kelas ibu hamil.

## Monitoring of Pregnant Women Using Mobile REST Applications (Risk identification, Evaluation counseling, Systematic monitoring, Troubleshooting): Cluster Randomized Controlled Trial

### ABSTRACT

**Background:** Maternal Mortality Rate (MMR) in Indonesia remains high and has not yet met the national target. The success of maternal health programs is primarily measured through MMR. Pregnancy monitoring is one of the key efforts to reduce maternal mortality. With the advancement of science, technology, and information, many activities that were previously performed manually can now be integrated digitally.

**Objective:** Improve maternal and child safety and health during pregnancy and childbirth through pregnancy monitoring using a REST mobile application.

**Methods:** This study used a Cluster Randomized Controlled Trial design, involving pregnant women in Purworejo Regency who are divided into 11 clusters in the intervention group and 11 clusters in the control group. The assistance program includes the use of the REST mobile application by integrating 10T pregnancy check-ups. A total of 220 respondents were recruited (22 clusters) and 217 respondents participated until the end of the study. Data collection included respondent characteristics, the number of antenatal care (ANC) visits, delivery methods, occurrence of delivery complications, and the birth weight of babies. Analysis was conducted bivariately using bivariate logistic regression to assess the relationship between each independent variable and the outcomes, as well as multilaterally using multilevel mixed-effects logistic regression to adjust for potential effects at the cluster level.

**Results:** The results obtained were that the use of REST mobile applications for pregnancy monitoring could increase the likelihood of a minimum number of ANC visits  $\geq 6$  times 3,65 times compared to the control group (OR = 3,65, 95% CI = 1,77 – 7,53,  $p < 0,001$ ). In the intervention group, there was a 3.65 chance of giving birth by normal method compared to the control group (OR = 3,65, 95%CI = 2,07 – 6,36,  $p < 0,001$ ). The likelihood of no complications in the intervention group was 4,18 times compared to the control group (OR = 4,18, 95%CI = 2,26 – 7,71,  $p < 0,001$ ). Infant birth weight of up to  $\geq 2500$  grams in the intervention group was 3,15 times more likely than in the control group (OR = 3,15, 95%CI = 1,67 – 5,95,  $p < 0,001$ ). The results of the study were statistically significant with a value of  $p < 0.05$ .

**Conclusion:** Pregnancy monitoring using the REST mobile application had a significant effect on the number of ANC visits  $\geq 6$  times, prevention of pregnancy complications, normal delivery method, and birth weight of the baby  $\geq 2500$  grams.

**Keywords:** pregnancy monitoring, mobile application, Antenatal Care, maternal and child health, pregnant women class.