

ABSTRACT

Background: Circumcision is a common procedure for boys in Indonesia, mainly for religious and health reasons. However, many children experience fear and anxiety, especially due to the use of needles for anesthesia. The introduction of new technology, such as needle-free injection, offers a solution by eliminating the need for needles, thereby reducing pain and fear. This method has been proven to make children calmer, more cooperative, and to reduce the risk of complications. This study aimed to examine how the use of needle-free injection affects children's anxiety during circumcision.

Methods: This study was a quantitative, quasi-experimental research with a control group design involving 80 respondents. Data were measured using the GAD-7 instrument. Univariate data analysis was conducted using frequency distribution, while bivariate analysis was performed using the Wilcoxon test and Mann-Whitney test.

Results: The study showed that the majority of respondents in the intervention group were aged 6-7 years, while the majority in the control group were aged 9-11 years. Before the intervention, severe anxiety occurred in 45.9% of the intervention group and 50% of the control group. After the intervention, minimal anxiety in the intervention group increased to 65%, while minimal anxiety in the control group remained at 5%. The Wilcoxon test showed that needle-free injection significantly reduced anxiety ($Z = -5.232, p < 0.001$), while the control group showed no changes ($Z = 0.000, p = 1.000$). The Mann-Whitney test also showed a significant difference ($Z = -6.161, p < 0.001$).

Conclusion: There was a significant effect on the anxiety levels of school-age children undergoing circumcision before and after the use of needle-free injection at Rumah Sunat Surga Khitan.

Keywords: Anxiety; School-age Children; Needle-free Injection

ABSTRAK

Latar Belakang: Sirkumsisi atau khitan adalah prosedur umum pada anak laki-laki di Indonesia, terutama karena alasan agama dan kesehatan. Namun, banyak anak merasa takut dan cemas, terutama karena jarum suntik yang digunakan untuk anestesi. Penggunaan teknologi baru seperti *needle-free injection* menawarkan solusi dengan menghilangkan penggunaan jarum, sehingga rasa sakit dan ketakutan dapat berkurang. Metode ini terbukti membuat anak lebih tenang, kooperatif, dan mengurangi risiko komplikasi. Penelitian ini bertujuan untuk melihat bagaimana penggunaan *needle-free injection* ini memengaruhi kecemasan anak selama sirkumsisi.

Metode: Penelitian ini merupakan penelitian kuantitatif dengan rancangan penelitian *quasi-eksperimental with control group design* dengan jumlah 80 responden. Pengukuran data dengan instrumen GAD-7. Analisa data univariat menggunakan distribusi frekuensi. Analisa bivariat menggunakan uji *Wilcoxon* dan uji *Mann Whitney*.

Hasil: Penelitian menunjukkan bahwa mayoritas responden dikelompokkan intervensi berusia 6-7 tahun, sedangkan kelompok kontrol mayoritas berusia 9-11 tahun. Sebelum intervensi, kecemasan berat terjadi pada 45,9% dikelompokkan intervensi dan 50% dikelompokkan kontrol. Setelah intervensi, kecemasan minimal dikelompokkan intervensi meningkat menjadi 65%, sementara kecemasan minimal dikelompokkan kontrol tetap 5%. Uji *Wilcoxon* menunjukkan *needle-free injection* signifikan mengurangi kecemasan ($Z = -5,232, p < 0,001$), sedangkan kelompok kontrol tidak menunjukkan perubahan ($Z = 0,000, p = 1,000$). Uji *Mann-Whitney* juga menunjukkan perbedaan signifikan ($Z = -6,161, p < 0,001$).

Kesimpulan: Ada pengaruh signifikan antara tingkat kecemasan pada anak usia sekolah saat sirkumsisi sebelum dan sesudah penggunaan *needle-free injection* di rumah sunat Surga Khitan.

Kata Kunci: Anak Usia Sekolah; Kecemasan; *Needle-free Injection*