Hubungan Status Hidrasi dengan Tekanan Darah Pada Komunitas Lari di Daerah Istimewa Yogyakarta

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INTISARI

Latar Belakang: Pelari membutuhkan keseimbangan cairan optimal untuk mempertahankan performa dan mencegah kelelahan atau cedera. Aktivitas yang memiliki intensitas yang tinggi seperti berlari memiliki potensi risiko terjadinya ketidakseimbangan cairan. Dehidrasi dengan penurunan >2% berat badan berdampak pada penurunan daya tahan, fungsi kardiovaskular, dan peningkatan viskositas darah yang kemudian mempengaruhi tekanan darah.
Tujuan: Menilai hubungan antara status hidrasi menggunakan parameter perubahan berat badan terhadap tekanan darah pada pelari komunitas di Daerah Istimewa Yogyakarta.
Metode: Desain observasional *cross-sectional* terhadap 111 pelari berusia 18-45 tahun dengan pengukuran berat badan dan tekanan darah dalam tiga titik waktu yang berbeda, yaitu sebelum lari, setelah lari, dan setelah 30 menit pemulihan. Analisis normalitas menggunakan uji Kolmogorov-Smirnov, analisis univariat menggunakan metode ANOVA. Analisis hubungan menggunakan metode korelasi Pearson, uji ANOVA untuk perbedaan kelompok hidrasi, dan uji Mann-Whitney untuk pengaruh terhadap perbaikan tekanan darah.
Hasil: Meskipun terjadi penurunan berat badan rata-rata signifikan setelah lari ($p<0,001$), mayoritas pelari tetap memiliki status hidrasi normal (euhidrasi). Tekanan darah sistolik dan diastolik menurun signifikan pada tiga titik waktu ($p<0,001$). Uji korelasi tidak menemukan pengaruh yang signifikan (sistolik $p = 0,664$; diastolik $p = 0,631$), namun analisis kelompok hidrasi menunjukkan perbedaan bermakna pada tekanan darah sistolik *post-run* ($p < 0,05$). Tidak terdapat pengaruh yang signifikan pada upaya rehidrasi terhadap perbaikan tekanan darah (sistolik $p = 0,497$; diastolik $p = 0,773$).
Kesimpulan: Status hidrasi berdasarkan perubahan berat badan dan upaya rehidrasi tidak berpengaruh langsung terhadap tekanan darah. Namun, perbedaan tekanan darah terlihat bermakna antar kelompok hidrasi.
Kata kunci: status hidrasi; tekanan darah; asupan cairan; pelari komunitas

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The Relationship Between Hydration Status and Blood Pressure Among the Running Community at Daerah Istimewa Yogyakarta

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ABSTRACT

Background: Runners require optimal fluid balance to maintain performance and prevent fatigue or injury. High-intensity activities such as running carry a risk of fluid imbalance. Dehydration exceeding a 2 % body-weight loss impairs endurance, cardiovascular function, and increases blood viscosity, which in turn can affect blood pressure.
Objective: To examine the relationship between hydration status, assessed by changes in body weight, and blood pressure among runners community in the Special Region of Yogyakarta.
Methods: This observational cross-sectional study involved 111 runners aged 18–45 years. Body weight and blood pressure were measured at three time points: before running, immediately after running, and 30 minutes after recovery. Normality was assessed using the Kolmogorov–Smirnov test, and univariate analysis was performed with ANOVA. Relationship analysis employed Pearson's correlation, ANOVA was used to examine differences among hydration groups, and the Mann–Whitney test was applied to evaluate effects on blood pressure improvement.
Results: Although there was a statistically significant mean body-weight loss after running ($p < 0.001$), the majority of runners remained in a normal hydration state (euhydration). Both systolic and diastolic blood pressures declined significantly across all three time points ($p < 0.001$). Correlation analyses found no significant associations (systolic $p = 0.664$; diastolic $p = 0.631$), yet the hydration-group comparison revealed a significant difference in post-run systolic blood pressure ($p < 0.05$). Finally, rehydration efforts did not exert a significant effect on blood pressure recovery (systolic $p = 0.497$; diastolic $p = 0.773$).
Conclusion: Hydration status (measured by body weight change) and rehydration efforts do not directly influence blood pressure. However, significant differences in blood pressure were observed between hydration categories.
Keywords: hydration status; blood pressure; fluid intake; runners community.

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