

## PERBEDAAN PENGARUH PEMBERIAN MINUMAN ISOTONIK KOMERSIAL, AIR MINERAL DAN TEH MANIS TERHADAP STATUS HIDRASI PEKERJA INDUSTRI BAJA

Aulia Jasmine K. I<sup>1</sup>, Mirza Hapsari<sup>2</sup>, Harry Freitag L. M<sup>2</sup>

### ABSTRAK

**Latar Belakang:** Pekerja industri baja sering melakukan kegiatan fisik di iklim kerja yang panas dalam waktu yang lama sehingga berpotensi mengalami dehidrasi. Dalam hal ini, ahli gizi berperan untuk menemukan jenis dan jumlah cairan yang tepat untuk mengatasi dehidrasi.

**Tujuan Penelitian:** Untuk mengetahui pengaruh pemberian minuman isotonik komersial, air mineral dan teh manis terhadap status hidrasi pekerja industri baja dengan melihat status hidrasi.

**Metode:** Metode penelitian ini pre eksperimental dengan rancangan *One Group Pretest- Posttest Design*. Sampel adalah pekerja industri baja berusia 16-49 tahun yang memenuhi kriteria inklusi di Titi Kuning, Medan sebanyak 54 responden. Profil urin diperiksa 7 kali, yaitu sebelum diberikan intervensi dan 3 hari selama intervensi pada 3 kelompok perlakuan. Pemeriksaan dilakukan menggunakan *urine color chart* dan *strip reagent urinalysis*. Data dianalisis secara deskriptif dan analitik dengan *fischer's exact test*, *oneway ANOVA* dan *paired-t test*.

**Hasil:** Terdapat hubungan antara sebelum dan sesudah intervensi pada kelompok MI terhadap warna dan berat jenis urin ( $p < 0,5$ ). Sebelum intervensi MI subjek memiliki rata-rata skor warna  $4,11 \pm 1,5$  dan rata-rata berat jenis dengan rata-rata  $6,08 \pm 0,4$ . Kemudian rata-rata skor warna dan berat jenis berturut-turut setelah diberikan MI, yaitu  $2,82 \pm 0,6$  dan  $6,15 \pm 0,3$ . Terdapat hubungan antara sebelum dan sesudah intervensi pada kelompok AM terhadap berat jenis urin ( $p < 0,5$ ) dengan nilai rata-rata  $6,06 \pm 0,6$  pada sebelum dan  $5,81 \pm 0,5$  pada sesudah intervensi. Tidak terdapat hubungan antara sebelum dan sesudah intervensi pada kelompok TM terhadap warna, kejernihan, pH dan berat jenis urin ( $p > 0,5$ ). Terdapat perbedaan rerata skor warna dengan nilai  $p < 0,0001$  pada warna;  $0,037$  pada pH;  $0,037$  pada berat jenis urin.

**Kesimpulan:** Adanya hubungan pemberian minuman isotonik komersial terhadap warna dan berat jenis urin. Terdapat hubungan pemberian air mineral terhadap berat jenis urin. Kemudian, tidak ada hubungan pemberian teh manis terhadap warna, kejernihan, pH, dan berat jenis urin. Dan terdapat perbedaan warna, pH, dan berat jenis urin pada setiap kelompok intervensi

**Kata kunci:** air mineral, hidrasi pekerja industri, minuman isotonik, teh manis

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<sup>1</sup> Mahasiswa S1 Program Studi Gizi Kesehatan, Fakultas Kedokteran, Kesehatan Masyarakat dan Keperawatan Universitas Gadjah Mada

<sup>2</sup> Bagian Program Studi Gizi Kesehatan, Fakultas Kedokteran, Kesehatan Masyarakat dan Keperawatan Universitas Gadjah Mada

## DIFFERENCE IN THE EFFECT OF GIVING COMMERCIAL ISOTONIC DRINKING, MINERAL WATER AND SWEET TEA ON STEEL INDUSTRIAL WORKER HYDRATION STATUS

Aulia Jasmine K. I<sup>1</sup>, Mirza Hapsari<sup>2</sup>, Harry Freitag L. M<sup>2</sup>

### ABSTRACT

**Background:** Steel industry workers often carry out physical activities in a hot working climate for a long time so they are potentially dehydrated. In this case, nutritionists play a role in finding the right type and amount of fluid to treat dehydration.

**Objective:** To determine the effect of commercial isotonic drinks, mineral water and sweet tea on the hydration status of steel industry workers by looking at hydration status.

**Methods:** This research method is pre-experimental with the design of One Group Pretest-Posttest Design. The sample was steel industry workers aged 16-49 years who met the inclusion criteria in Titi Kuning, Medan as many as 54 respondents. Urine profile was examined 7 times, before the intervention and 3 days during the intervention in 3 treatment groups. The examination is performed using a urine color chart and a reagent urinalysis strip. Data were analyzed descriptively and analytically by Fischer's exact test, one-way ANOVA and paired t-test.

**Results:** There was a relationship between before and after intervention in the MI group on urine color and specific gravity ( $p < 0.5$ ). Before the intervention MI subjects had an average color score of  $4.11 \pm 1.5$  and the average urine specific gravity of  $6.08 \pm 0.4$ . Then the average color score and urine specific gravity after MI were given, namely  $2.82 \pm 0.6$  and  $6.15 \pm 0.3$ . There was a relationship between before and after intervention in the AM group on urine specific gravity ( $p < 0.5$ ) with an average value of  $6.06 \pm 0.6$  at the time before and  $5.81 \pm 0.5$  after the intervention. There was no relationship between before and after intervention in the TM group on color, clarity, pH, and urine specific gravity ( $p > 0.5$ ). There is a difference in average color scores with p values  $< 0.0001$  on color;  $0.037$  on pH;  $0.037$  on the specific gravity of urine.

**Conclusion:** There were a relationship between commercial isotonic drinks and the color and specific gravity of urine. There were a relationship between the administration of mineral water and the weight of urine. Then, there were no correlation between the provision of sweet tea for color, clarity, pH, and urine specific gravity of urine. And there were differences in color, pH, and urine specific gravity in each intervention group

**Keywords:** mineral water, industrial worker hydration, isotonic drinks, sweet tea

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<sup>1</sup> Undergraduate of Nursing Student, Faculty of Medicine, Public Health and Nursing, University of Gadjah Mada

<sup>2</sup> Department of Health Nutrition, Faculty of Medicine, Public Health and Nursing, University of Gadjah Mada