

ABSTRACT

Industrial workers in various sectors have great potential in being exposed to dust in their work environment. This study used a cross sectional study design. The population in the study are 55 people, with 28 workers in the casting division and 23 workers in finishing division. The sample used was 36 people, with 20 casting members and 16 finishing members. Data analysis in this study is using univariate and bivariate analysis using chi square test and multivariate analysis with regression and correlation tests. The results of this study indicate that there are 10 people (29%) of Home Industry C-Maxi Alloycasting that having lung function disorders. The level of dust exposure in the Home Industry C-Maxi Alloycasting from five sample points is below the value of the dust threshold in the workplace which is $<10 \text{ mg / m}^3$, the highest dust exposure is found on the 2nd floor area in the section finishing adjacent to the generator engine which is equal to $0,27 \text{ mg / m}^3$ and the lowest dust exposure was found on the 1st floor of the casting area which is $0,04053 \text{ mg / m}^3$. The bivariate test results of respondents' characteristics of pulmonary function disorders showed a significant relationship between age (p value = 0,032), mask usage habits (p value = 0,032) and history of disease (p value = 0,004) to pulmonary function disorders in workers in Home Industry C-Maxi Alloycasting. Further test results of multivariate analysis showed that a history of disease significantly affect pulmonary function impairment of workers in industry Home C-Maxi Alloycasting with a significance value of 0,038 or $<0,05$.

Keywords: Dust exposure, lung function capacity, Home Industry C-Maxi Alloycasting's workers

ABSTRAK

Pekerja industri di berbagai sektor memiliki potensi besar dalam terpapar debu di lingkungan kerja. Penelitian ini menggunakan desain studi cross sectional. Populasi dalam penelitian berjumlah 55 orang, dengan 28 pekerja bagian divisi *casting* dan 23 pekerja bagian divisi *finishing*. Sampel yang digunakan yaitu sebanyak 36 orang, dengan 20 orang bagian *casting* dan 16 orang bagian *finishing*. Analisis data pada penelitian ini menggunakan analisis univariat, bivariat dengan menggunakan uji *chi square* test dan multivariat dengan uji regresi dan korelasi. Hasil penelitian ini menunjukkan bahwa terdapat 10 orang (29%) *Home Industry* C-Maxi Alloycasting mengalami gangguan fungsi paru. Tingkat paparan debu di *Home Industry* C-Maxi Alloycasting dari lima titik sampel berada dibawah nilai ambang batas debu di tempat kerja yaitu $< 10 \text{ mg/m}^3$, paparan debu tertinggi terdapat pada area lantai 2 pada bagian *finishing* yang bersebelahan dengan mesin genset yaitu sebesar $0,27 \text{ mg/m}^3$ dan paparan debu terendah terdapat pada lantai 1 area *casting* sebesar $0,04053 \text{ mg/m}^3$. Hasil uji bivariat karakteristik responden terhadap gangguan fungsi paru menunjukkan terdapat hubungan yang signifikan antara umur (p value = 0,032), kebiasaan pemakaian masker (p value = 0,032) dan riwayat penyakit (p value = 0,004) terhadap gangguan fungsi paru pada pekerja di *Home Industry* C-Maxi Alloycasting. Hasil uji lanjut analisis multivariat menunjukkan bahwa riwayat penyakit secara signifikan berpengaruh terhadap gangguan fungsi paru pekerja di *Home Industry* C-Maxi Alloycasting dengan nilai signifikansi sebesar 0,038 atau $< 0,05$.

Kata kunci: Paparan debu, kapasitas fungsi paru, pekerja *Home Industry* C-Maxi Alloycasting