



# Factors associated with an outbreak of COVID-19 in an oilfield workers, Kazakhstan, June–September, 2020

Abstract

## Information

### Background :

By June 2020 Kazakhstan suspended two-third of the oilfield workforce after 2,661 cases of COVID-19 were reported despite implemented preventive measures. We assessed individual and environmental factors associated with the COVID-19 transmission in the facility.

### Methods :

Cases were employees of selected shift camps with the highest incidence who tested positive for SARS-CoV-2 during June–September 2020. We selected randomly controls from SARS-CoV-2 negative employees who concurrently lived at the same shift camps. Sociodemographic data, information on knowledge, attitude, practice towards COVID-19, working and living environment were collected. In addition to descriptive epidemiology, bivariate and multivariate logistic regression analyses were performed with R software. Factors significant in the bivariate analysis ( $p < 0.05$ ) were considered in a multivariable analysis. Adjusted odds ratios (aOR), 95% confidence intervals (CI) were calculated by multivariate logistic regression.

### Results :

The study had 296 cases and 536 controls with 627 (75%) men and 527 (63%) participants below 40 years of age. Of the seventeen studied individual factors, rare antiseptic use (adjusted odds ratios (aOR)=4.1, 95% confidence intervals (CI)=1.8–10.1), non-use at the workplace (OR=2.96, 95%CI=1.24–7.62), travel before shift work (aOR=2.8, 95%CI=1.0–7.9), and social interaction outside of work (aOR=1.8, 95%CI=1.2–2.9) were associated with increased COVID-19 transmission. Belief that asymptomatic COVID-19 is contagious (aOR=0.5, 96% CI=0.3–0.8), belief that facemasks protect in public places (aOR=0.4, 96% CI=0.2–0.8), and use of fabric facemasks (aOR=0.3, 96% CI=0.2–0.5) appeared to be protective against COVID-19. Of the nineteen environmental factors only air-conditioned premises (aOR=4.0, 95%CI:1.3–13.1) was associated with COVID-19 transmission.

### Conclusions :

Individual factors were the main drivers of COVID-19 transmission; environmental factors contributed little to the transmission. Communication messages should enhance workers' individual responsibility and responsibility for the safety of others to reduce COVID-19 transmission.

Disease groups topics COVID-19

Health functions topics Field epidemiology (e.g. outbreak investigations)

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