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## ASSESSING CONTAMINATION OF *ESCHERICHIA COLI* IN INTERNATIONAL AND BELARUSIAN STUDENT GROUPS

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**Relevance.** The assessment of *Escherichia coli* contamination among international and Belarusian student groups is highly relevant for several reasons. *E. coli* is a well-known indicator of fecal contamination and can lead to serious health issues, including gastrointestinal infections, which emphasize the importance of hygiene practices in preventing disease transmission. By identifying the presence of *E. coli* specifically in the international student population, this study highlights potential vulnerabilities in hygiene awareness and practices that could pose significant health risks.

**Aim:** to assess and compare bacterial contamination on mobile phones and hands of Belarusian and International students, with a specific focus on identifying *Escherichia coli* presence.

**Materials and methods.** Sterile Swabs used to collect swab samples from Mobile phones (30 Belarusian students, 30 International students) and Hands. Samples cultured in MacConkey agar for 22hrs at 37°C. Gram Staining was performed to Identify type of bacteria present. Kligler Iron media, Manitol and Maltose medias were used to further confirm the type of bacteria. Lab confirmation for final identifying.

**Results and their discussion.** Swab samples were collected from mobile phones and hands of international and Belarusian students to examine bacterial contamination and hygiene practices. For 30 international students, mobile phone samples revealed colonies in 16 cases, with each dish containing 1–39 colonies, mostly smooth, and sized 1.6–7.9 mm. Gram staining indicated 8 Gram-positive bacteria and 8 Gram-negative bacteria; among the latter, 6 were rod-shaped. Tests using Kligler Iron media confirmed glucose and lactose fermentation in all 6, and additional testing with mannitol and maltose led to the likelihood of it being *Escherichia coli*. Conversely, samples from 30 Belarusian students showed bacterial colonies in only 8 cases, with 3–34 colonies per case, mostly smooth (7), and sized 1.2–6.5 mm. Gram staining showed predominantly Gram-positive *Staphylococcus* bacteria and 2 cases of Gram-negative bacteria. Further testing ruled out glucose and lactose fermentation, confirming the absence of *E. coli*.

To explore hand hygiene, swabs were collected from the hands of 20 students from each group. Among international students, colonies were present in 7 samples, with 2 showing shiny surfaces indicative of *E. coli*. Testing confirmed glucose and lactose fermentation in 4 cases, and laboratory analysis identified *E. coli* in 2 samples. For Belarusian students, colonies were found in 14 cases, ranging from 1–19 colonies per dish. Tests confirmed glucose and lactose fermentation in 2 cases; however, no *E. coli* was detected in further analysis. These findings suggest that Belarusian students maintain better hygiene practices than international students, as reflected in the lower prevalence of bacterial colonies, including *E. coli*. External factors like phone cover materials were also identified as contributing to bacterial growth, highlighting opportunities for awareness and further research

**Conclusions.** Based on the findings, it can be concluded that Belarusian students demonstrated comparatively better hygiene practices than international students, as evidenced by a lower prevalence of bacterial colonies in both mobile phone and hand swab samples. Notably, the presence of *Escherichia coli* was identified exclusively in samples collected from international students, reinforcing the need for improved hygiene awareness. Additionally, these results highlight the influence of external factors, such as phone cover material, on bacterial growth, suggesting this as an avenue for further research and awareness campaigns. Overall, promoting regular hygiene practices among all individuals is essential to reducing microbial contamination and potential health risks.