Occurrence of *Salmonella* spp. and *Escherichia coli* in Retail Broiler Chicken Manually Processed in Live Bird Handling Shops and Their Hygienic Practices Within Colombo Municipality – Preliminary Findings

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Broiler chicken is widely consumed in Sri Lankan food culture, favoured over beef, mutton and pork due to its affordability, availability and cultural acceptance. Recent statistics indicate high popularity for chilled broiler chicken in the local market. However, limited data are available on the microbiological quality of such broiler meat manually processed and sold in live bird handling meat shops. Therefore, this study focused on evaluating the prevalence of two common food-borne pathogens in retail broiler chicken meat and assessing hygienic practices in live bird handling meat shops in public markets of Colombo Municipality. A descriptive cross-sectional study was conducted. Data were collected through direct observation, interviewer-administered questionnaires and assessment checklists. Hygienic parameters were evaluated related to the handling of live birds, meat, equipment, water supply, waste disposal and personal hygiene. To explore the microbiological quality of the meat, a 250 g meat sample was purchased from each outlet. The vendor's standard wrapping method was used to simulate consumer exposure during handling. *Escherichia coli* and *Salmonella* spp. were isolated from meat, utilizing standard protocols and PCR was performed to confirm the isolates which were identified through biochemical methods. The results revealed that, among 44 chicken meat samples collected from 27 stalls, the prevalence of *Salmonella* spp. was 57% (25/44) while the prevalence of *Escherichia coli* was 50% (22/44). According to the observational study, 74% (20/27) of stalls were found to be in poor hygienic status, and 22% (6/27) were found in moderate level. Several deficiencies were identified, including poor waste management, inadequate cleaning practices, lack of hand washing, unsuitable methods of keeping live birds with meat items, poor pest control and limited use of protective equipment by workers. Inadequate awareness regarding practices and irregular monitoring by authorities were also observed. This study highlights a high prevalence of zoonotic pathogens in retail poultry, indicating potential public health risks associated with the improper hygienic practices. However, further studies are needed to investigate the association between pathogen prevalence and specific hygienic practices in live bird handling meat shops to better understand the factors contributing to microbial contamination. Therefore, immediate interventions are required to enforce regulations, improve hygiene management and enhance awareness among vendors, ultimately reducing the risk of zoonotic disease transmission.

Keywords: food-borne pathogens, *Salmonella*, *Escherichia coli*, broiler chicken, live bird handling