Increasing cases of food poisoning outbreaks has led to calls for better hygiene practices. With training and increasing knowledge, the perception, attitude and behaviour with regards to food safety are expected to improve, and therefore lead to a reduction the cases of food poisoning. The purpose of this study was to evaluate the knowledge, attitude and behaviour of the food handlers and the National School Nutrition Programme (NSNP) representatives towards general food safety principles while administering the programme in schools. The study was conducted in the form of structured questionnaires in 20 schools which were beneficiaries of the NSNP in Bloemfontein, South Africa. Although most participants recognized the essential role that personal hygiene plays in food safety (about 90% of the participants reportedly removed jewellery and washed hands several times during food preparation), the data collected indicated an overall average score in terms of knowledge (75% recognized that separate cutting boards should be used for raw and cooked food, while 57.5% perceived only those who prepare the food as responsible in ensuring food safety). Data also indicated positive self-reported behaviour and a positive attitude displayed by participants’ interest in receiving much needed training (90% of the respondents were willing to receive training in food safety). Increasing rates of food poisoning incidences can easily be reduced because food safety is achievable through inexpensive and simple procedures such as adequate washing of hands during food preparation, adding disinfect to water and detergent when cleaning, using hot water, wearing clean protective clothing and avoiding handling food when ill or injured.