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Knowledge, Attitudes, and Practices of Airliners and Baggage Handlers regarding the Use of Permethrin Insecticide on Aircraft

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Abstract

Introduction: Jamaica is one of the countries that does ongoing aircraft spraying on arrival. In response to the Ministry of Health Jamaica guidelines, permethrin insecticide will be administered in aircraft disinfection, including cockpit, cabin, and cargo holes. This matter is done in cases where other approved disinfection methods are not done.

Objective: To evaluate the knowledge, attitudes, and practices of airliners and baggage handlers regarding using permethrin insecticide on aircraft, providing a comprehensive understanding of their perceptions and behaviours in this context.

Methods and materials: This study employed a quantitative cross-sectional correlational survey design. The research sample was randomly selected from airliners and baggage handlers of Norman Manley International Airport. One hundred (100) 184 employees were invited to participate in this study. This type of organisation was conveniently selected due to its availability to the research team; the process included selecting an organisation to which she is employed.

Findings: It revealed that 49 (68.1%) of the respondents in this study were males, while 23 (31.9%) were females. The findings revealed a high level of knowledge of airliners and baggage handlers regarding using permethrin insecticide on aircraft (mean = 11.90; SD 1.59). Similarly, the attitude of airliners and baggage handlers towards using permethrin insecticide on aircraft was high (mean = 4.17; SD 1.74). Additionally, the findings showed that the mean rating of the practice of airliners and baggage handlers towards using permethrin insecticide on aircraft was 2.51; SD= .82, indicating a moderate level of practice towards permethrin use.

Conclusion: Airliners and baggage handlers have a high knowledge and attitude towards using permethrin insecticide on aircraft.

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Keywords: Aircraft, airliners, baggage handlers, permethrin insecticide.

Background to the Study

Jamaica is one of the countries that does ongoing aircraft spraying on arrival. In response to the Ministry of Health Jamaica guidelines, permethrin insecticide will be administered in aircraft disinfection, including cockpit, cabin, and cargo holes. This matter is done in cases where other approved disinfection methods are not done. Information on the safety material data sheet should concern baggage handlers, ground agents, aircraft cleaners, security guards, and airline agents. The monitoring of exposure to insecticides, along with knowledge of the treatment schedule of the aircraft, could provide an understanding of the relationship between insecticide use on aeroplanes and exposure levels experienced by occupants. This information can provide baseline information for assessing health risks associated with short, high levels of exposure or long-term chronic or cumulative exposures to insecticides. Disinfection treatment of aircraft to prevent the movement of potentially invasive or disease-carrying insects began in the 19th century (Rayman, 2006), and the practice was adopted in the United States and other countries by the late 1930s (Gratz et al., 2007; Riley, 2002).

Interestingly, the USA and several other countries (Berger-Preiss et al., 2004, 2006; Spicer et al., 2004; Wei et al., 2012, 2013) routinely spray aircraft, including Jamaica, and still require disinfection (USDOT, 2008). Some opposing views exist on the efficacy and risks of chemical disinfection (Rayman, 2006; Gratz et al., 2007). However, the practice is still obtainable in some countries of the world. Good knowledge and understanding of permethrin insecticide on aircraft could improve the practices of stakeholders regarding the safest means to prevent the spread of insect vectors and reduce the risk of passengers and crew exposure to insecticide. Permethrin is an active ingredient recommended by WHO for disinfection (WHO, 1995). Jamaica quarantine regulation requires incoming aircraft to be treated with permethrin; however, applying residual insecticide to aircraft is also acceptable. Four procedures are recommended by WHO for aircraft disinfection (WHO, 1985; 1995). The procedures can be classified as either aerosol delivered from spray cans or residual treatments using emulsifiable concentrates. In aerosol treatments, the aircraft cabin is sprayed after boarding passengers and before departure. The second procedure involves flight attendants spraying the cabin. Another procedure consists of spraying as the aircraft starts its descent, and the fourth involves spraying on arrival, where the cabin is sprayed just before passengers disembark. Permethrin provides some residual protection and acts as a repellant for insects. Residual treatments last for eight weeks.

Problem Statement

On observation, baggage handlers and airline agents do not adhere to the guidelines on using permethrin insecticides in disinfecting aircraft as directed. Alteration caused by improper use of this insecticide can harm their health. This study seeks to determine how these workers' knowledge, attitude, and practices affect their use of permethrin insecticide. It was conducted among baggage handlers, ground agents, aircraft cleaners, and security guards at a major International Airport in Jamaica.

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The Purpose and Significance of the Study

This study was critical because aircraft into countries where they were not previously found can introduce vectors and the diseases they transmit. The issue has been a concern since the inception of international air traffic. The primary purpose of this study was to ascertain the knowledge, attitudes, and practices of airliners and baggage handlers regarding the use of permethrin insecticide on aircraft. It also sought to identify if there are significant differences in knowledge, attitudes, and practices of airliners and baggage handlers towards using permethrin insecticide on aircraft. Then, they are grouped according to gender, age group, job status, tenure, academic training, and occupation. In addition, it sought to explore if there is a statistically significant relation between monthly income and knowledge, attitudes, and practices of airliners and baggage handlers towards the use of permethrin insecticide on aircraft.

This study was significant because introducing any disease by whatever means into an area where the disease is not endemic can be costly in terms of treatment, hospitalisation, epidemiological investigations, lost working time, human suffering, and even mortality. The knowledge, attitudes, and practices of aircraft cleaners and bag handlers are essential to keep our aircraft free of such diseases. This research was also significant as the results will provide policymakers and administrators with a generic model that can be used for risk assessment of exposure to insecticide products applied for aircraft disinfection. The findings should help aircraft cleaners and baggage handlers harmonise insecticide risk assessment. For administrators, it will generate comparable data for registering and labelling products by national regulatory authorities.

General Research Objective

To evaluate the knowledge, attitudes, and practices of airliners and baggage handlers regarding using permethrin insecticide on aircraft.

Specific Research Objectives:

To determine whether there are significant statistical differences in the knowledge, attitudes, and practices of airliners and baggage handlers regarding using permethrin insecticide on aircraft. Then, they are grouped according to gender, age group, job status, tenure, academic training, and occupation.

To determine whether there is a statistically significant relation between monthly income and knowledge, attitudes, and practices of airliners and baggage handlers towards using permethrin insecticide on aircraft.

Research Questions

1. What are the knowledge, attitudes, and practices of airliners and baggage handlers regarding using permethrin insecticide on aircraft?

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2. Are there significant differences in the knowledge, attitudes, and practices of airliners and baggage handlers regarding using permethrin insecticide on aircraft? Then, they are grouped according to gender, age group, job status, tenure, academic training, and occupation.
3. Is there a statistically significant relation between monthly income and knowledge, attitudes, and practices of airliners and baggage handlers towards using permethrin insecticide on aircraft?

Hypotheses

The study tested the following null hypotheses:

$H_0$1: Airliners and baggage handlers' knowledge, attitudes, and practices regarding using permethrin insecticide on aircraft are the same. Then, they are grouped according to gender, age group, job status, tenure, academic training, and occupation.

$H_0$2: There is no statistically significant relation between monthly income and knowledge, attitudes, and practices of airliners and baggage handlers towards using permethrin insecticide on aircraft.

Literature Review

Description of Aircraft Disinfection Procedures

The Schedule of Aircraft Disinfection Procedures developed by the governments of Australia and New Zealand (DAFF/MPI, 2012) can be used as a source of information.These disinfection procedures follow WHO's Report of the Informal Consultation on Aircraft Disinfection (WHO, 1995).

Residual disinfection

The residual disinsection method involves the regular spraying certain internal surfaces of the aircraft cabin (excluding food preparation areas) and holds with a residual insecticide; this ensures that if an insect gains access to the aircraft and lands on a surface, it will receive an effective dose of insecticide. Treatment must be repeated at intervals of at most eight weeks. Any treated areas subsequently deep cleaned or refurbished within the treatment interval must be retreated to ensure compliance (WHO, 1995).

Pre-embarkation cabin disinfection

The pre-embarkation cabin disinsection system was developed in Australia and New Zealand and provides for spraying aircraft cabins in the absence of passengers, i.e., before embarkation. The treatment lasts for the duration of the single flight sector. This method kills invertebrates that may be present in the cabin at the time of disinsection and leaves a minimal but effective amount of residue, likely to kill invertebrates that may board between the time of disinsection and departure. The number of insects that enter a treated cabin between these times may be fewer than enter an untreated cabin because of the repellent effect of

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permethrin (WHO, 1995; Kleinpaste, personal communication). Spraying is carried out using 2% permethrin aerosols. All overhead lockers are opened, and the cockpit, toilets, wardrobes, and other insect harbourage areas, such as the galley, are also treated now. This treatment is carried out with a suitable hold option (residual or aerosol). Blocks away disinfection “Blocks away” occurs before take-off but after passengers have boarded and the doors have been closed. The aircraft is treated by cabin crew members walking through the cabins and discharging aerosols at the prescribed dosage (spray cans). The crew must treat all possible insect harbourages, including toilets, galleys, wardrobes, and lockers. Holds and the flight deck are sprayed before departure and the flight deck before boarding by the crew.

Pre-flight and top-of-descent spraying

Pre-flight and top-of-descent spraying are two-part processes. The pre-flight spray is carried out before the passengers board and is usually performed in conjunction with a pre-flight disinfection of the hold. The timing of this spray allows lockers to be open and causes minimum inconvenience to passengers. Subsequent in-flight spraying occurs at "top-of-descent," i.e., as the aircraft descends to the destination airport.

An Operational Definition of Disinfection

WHO defines “disinfection" as the procedure whereby health measures are taken to control or kill the insect vectors of human diseases in baggage, cargo, containers, conveyances, goods, and postal parcels. Long-standing WHO recommendations cover using disinfection techniques in aircraft to help minimise the spread of mosquito-borne diseases (WHO, 1985). Mosquitoes are vectors of pathogens and parasites that cause several serious diseases, including dengue, yellow fever, and malaria (WHO, 2005). The International Health Regulations (2005) (IHR) establish global benchmark standards to prevent, protect against, control and provide a public health response to the international spread of disease in ways that are commensurate with and restricted to public health risks and that avoid unnecessary interference with international traffic and trade (WHO, 2005). Control measures for the disinfection of aircraft have “specific measures for vector-borne diseases," which states (clause 2) that, where there are methods and materials advised by WHO for disinfection, these should be employed and that (clause 3) States should accept disinfection if methods and materials advised by WHO have been used. Residual disinfection provides an insecticidal deposit on the inside walls of structures (cargo areas or passenger cabins) to kill target insects that come into contact with the treated surface. Such deposits are intended to remain active for extended periods.

Knowledge, attitudes, and practices towards Pandemic Measures

Responding to any pandemic is a serious challenge. Jamaica is one of the countries that does ongoing aircraft spraying on arrival. In response to the Ministry of Health Jamaica guidelines, permethrin insecticide will be administered in aircraft disinfection, including cockpit, cabin, and cargo holes. Especially with the advent of COVID-19, little is known about the epidemiological evidence of the disease, including its transmission dynamics, epidemic

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doubling time, and reproductive frequency (Li et al. (2020). The scarcity of literature on workers' knowledge, attitudes, and practices in aircraft disinfection raises heightened concerns; it becomes increasingly essential for workers to engage in precautionary behaviours at work, which is affected by their knowledge and attitude. The disease response and surveillance efforts at the policy level are expensive (Zhu et al., 2020; Nelson et al., 2007).

Attitudes

Amidst the COVID-19 pandemic, educating, engaging, and mobilising aircraft workers to participate in preventative measures may help achieve public health emergency preparedness, reducing the overall population's vulnerability (Lee, You, 2019). When aircraft workers collectively engage in preventive behaviours, including practising personal hygiene and maintaining best practices in disinfection, it is possible to control the spread of the disease, according to recent studies highlighting that individual behaviours may dramatically decrease morbidity and mortality rates of COVID-19 (Ferguson et al., 2020; Lin et al., 2020; Aburto et al., 2010). Therefore, a routine practice of precautionary behaviours among aircraft workers must become the new status quo at airports. For public health interventions and ministry policy to successfully encourage and sustain preventive behaviours among the workers, evidence on social, cognitive, and psychological factors associated with the behaviours is necessary.

Knowledge

For public health interventions and ministry policy to successfully encourage and sustain preventive behaviours among the workers, evidence of social and cognitive knowledge associated with their behaviours is necessary. Previous studies on infectious disease infection prevention and transmission showed that knowledge and awareness are critical ingredients for success (Lin et al., 2020; Aburto et al.; 2010; Brug et al.; 2004; de Zwart, Veldhuijzen, Richardus, Brug, 2010). Risk perception and efficacy belief are other cognitive and knowledge-related factors that motivate workers to adopt preventive behaviours. Similarly, recent studies on COVID-19 revealed that knowledge is a critical factor in disease prevention (Azlan et al., 2020; Saefi et al., 2020; Honarvar et al., 2020; Zhong et al., 2020). Also, the research found that knowledge of perceived controllability, optimistic beliefs, emotion, and risk perception may be associated with the precautionary actions of the public.

Practices

Practices regarding implementing health-related policies by airliners and baggage handlers towards using permethrin insecticide on aircraft include clean, high-touch surfaces. This includes cleaning high-touch surfaces at least once daily or as often as necessary. This issue requires that cleaning staff be trained on the proper use of cleaning and disinfecting products. Also, it is essential to read the instructions on the product label to determine what safety precautions are necessary while using the product. This could include personal protective equipment (PPE), gloves, glasses, goggles, additional ventilation, or other precautions.

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Tichenor, Donohue, Olien, 1970; Bekalu, Eggermont, 2014; Viswanathet al., 2009). When applying disinfectants, following the label's directions is recommended to ensure the product's safe and effective use. The label should include safety information and application instructions.

The Relationship between Knowledge, Attitudes, and Practice

Many knowledge, attitude, and practice studies have examined the associations of knowledge with attitudes or practices beyond understanding the prevalence of each about the spread of different diseases. The results of these previous studies revealed that a higher level of knowledge is positively related to the practice of preventive measures (Lowcock et al., 2012; Rutter et al., 2012; Biggerstaff et al., 2010; Lee et al., 2015; Lee et al., 2020; Peng et al., 2020). The literature also showed that attitudes are positively associated with preventive behaviours (Lowcock et al., 2012; Rutter et al., 2012). However, most of these studies examined the direct effects of knowledge on practising preventive behaviours or attitudes without exploring the indirect impact of expertise on practices mediated via attitudes to explicate the in-depth psychological mechanism behind how individuals perform behaviours based on their health knowledge. Specifically, how knowledge affects practices indirectly via attitudes in the context of disease prevention through sanitation remains peripheral.

Knowledge gaps and behavioural patterns among sociodemographic subgroups

Knowledge gaps and behavioural patterns among sociodemographic subgroups are crucial to understanding and reducing equality in health care. This information is essential to implement effective public health interventions (Briss et al., 2004). The issue of health inequalities unfolding during disease outbreaks such as COVID-19 has been extensively investigated across pandemics ((Briss et al., 2004; Rimer et al., 2004). We can draw experience from the novel influenza A (H1N1) burden, which was substantially higher for people who were less educated (van den Berg, Timmermans, ten Kate, et al., 2020) and live in more deprived neighbourhoods (Briss et al., 2004; Rimer et al., 2004; van den Berg et al., 2006; Ashrafi-Rizi & Kazempour, 2020). It was found that people facing inequalities experienced more significant financial barriers (WHO, 2020; Lee et al., 2020. In the case of the 2015 Middle East Respiratory Syndrome (MERS), Brennen et al. (2020) and Gao et al. 2020) have shown social determinants were directly (gender, education) or indirectly (age, education, income) related to practising preventive behaviours. Evidence of an unequal burden of COVID-19 is also emerging fast. People living in impoverished and racially and economically polarised areas showed considerably more significant morbidity and mortality rates of COVID-19 (Al-Naggar, Osman, 2015; Chandler et al., 2015). It is also worth noting that the COVID-19 burden may be coupled with existing non-communicable diseases among marginalised social groups, particularly those in minority ethnic groups, socioeconomic deprivation, and poverty, aggravating the populations' overall vulnerability. Behavioural factors related to COVID-19 are also unevenly distributed among people. Similar studies have shown that males, less educated individuals, and older people showed lower COVID-19

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knowledge and behaviours than their counterparts, and risk perception varied by the level of social support (Rimal, Lapinski, 2009).

Another study on Chinese undergraduate students revealed that gender significantly affects students' attitudes and practices (Vinck et al., 2019; Rimal, 2000; Wong et al., 2020; Rimal, Lapinski, 2009). Given these alarming inequalities in behavioural factors, there remains an urgent need to identify vulnerable populations during the COVID-19 pandemic to ensure that health education and communication interventions are tailored to their needs. There is limited evidence concerning behavioural factors and related vulnerability during the COVID-19 pandemic in South Korea. The present study addresses whether the public performs precautionary behaviours recommended by the national guidelines and behavioural interventions, along with which populations to prioritise in health behaviour change interventions. Studies have quantified and tested the relationships between knowledge, attitudes, and practices and examined how sociodemographic characteristics interplay with behavioural components (Rimal, Lapinski, 2009).Specifically, this study investigated the knowledge, attitudes, and practices of airliners and baggage handlers toward using permethrin insecticide on aircraft. Also, it explores knowledge of the use of permethrin insecticide on aircraft influences practices and whether attitudinal factors mediate the relationship. The results of this study have implications for developing and implementing evidence-based health behaviour interventions and policies regarding airliners and baggage handlers regarding the use of aircraft disinfection.

Research Methodology

This study examined the knowledge, attitudes, and practices of airliners and baggage handlers toward using permethrin insecticide on aircraft. It sought to identify if there is a significant difference in knowledge, attitudes, and practices of airliners and baggage handlers towards using permethrin insecticide on aircraft when grouped according to gender, age group, job status, tenure, academic training, and occupation. This chapter encompasses the following sections: research design, population, sample and sampling procedure, instrumentation, data collection procedure, data analysis procedure, ethical considerations, and summary.

Research Design

This study employed a quantitative cross-sectional correlational survey design. According to Lichtman (2013), a quantitative cross-sectional correlational survey research approach is a method that includes hypothesis testing, a gathering of numerical data, and the generalising of findings. Thus, quantitative research is appropriate for assessing airliners' and baggage handlers' knowledge, attitudes, and practices regarding using permethrin insecticide on aircraft. Griffith (2012) believed that quantitative research entails more than numerical data. Therefore, this design utilised a questionnaire instrument to ascertain if there are significant differences in knowledge, attitudes, and practices of airliners and baggage handlers towards the use of permethrin insecticide on aircraft. Then, they are grouped according to gender, age group, job status, tenure, academic training, and occupation. At the beginning of this quantitative research process, the research problem, in the form of research questions, is

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stated along with the research procedure outlined in this chapter. Also, in this quantitative research, more participant interaction is needed. Thus, the choice of this design was informed by the post-positivist paradigm. This paradigm holds that people live in a stable and predictable world in which phenomena can be measured, understood, and generalised about the world (Griffith, 2012). Therefore, this research design used the quantitative approach to obtain empirical data on the phenomenon.

In addition, this quantitative study utilised an ex post facto research strategy, which will be causal-comparative. This was an ex post facto research as the variables involved were investigated in retrospect in a quest to ascertain the influence of various independent variables on the levels of knowledge, attitudes, and practices of airliners and baggage handlers towards the use of permethrin insecticide on aircraft (Stephen & Wiersma, 2009). An ex post facto was appropriate for this study as experimental designs would be difficult, expensive, and time-consuming. In addition, results from existing studies on the variables tested in this study constantly revealed that the independent and dependent variables are linked in some ways, and the independent variables do not precede the dependent variable.

Population

Gay, Mills, and Airasian (2011) stated that population is the general term for the larger group from which a sample is selected or to which the research team would like to generalise the study's results. The population of this research comprised airliners and baggage handlers of Norman Manley International Airport (NMIA). NMIA airline service operators include Goddard Catering Group, Ajas, Eulen, Airways International and Airlift handlers. These providers employ workers on a permanent and contractual basis. These include Baggage Handlers, Ground Agents, Aircraft cleaners, and security guards. These workers work on shifts as the airport is open 24 hours. Norman Manley International Airport(NMIA) can be considered a community; as a Public Health Inspector working at the airport, my roles include the general sanitation and environmental health aspects of the airport and its environs, including health education to workers on the safety measures to take when applying before, during and after the application of permethrin to prevent diseases of vector-borne nature, ensure that wholesome and sound food is sold, to grant pratique to all incoming aircraft, supervision of vector control activities. The amenities at NMIA include a credit union, race track, food establishments, car parks, mini JDF base, Police station, fire station, incinerator (airport and international waste), and other small establishments. Continuous observation over the years has resulted in my decision to address the public health issue of the improper use of the pesticide permethrin by workers at the Norman Manley International Airport, Kingston, Jamaica.

Sample and Sampling

A sample is several individuals, items, or events selected from a population for a study and represents the larger group from which they were selected (Gay et al., 2011). Sampling is the strategy and procedure for choosing a more comprehensive population sample. The research sample was randomly selected from airliners and baggage handlers of Norman Manley

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International Airport. One hundred (100) 184 employees were invited to participate in this study. This type of organisation was conveniently selected due to its availability to the research team; the process included selecting an organisation to which she is employed. The sampling technique used to select the sample is appropriate for this research as it ensures the presence of the key groups within the study sample. Hence, simple random sampling ensured representative sampling of even the least represented staff member. This allowed the research team to sample the rare extremes of the population.

The names of the workers from the sample were typed on a piece of paper, folded, and placed in a hat. The research team selected 100 of the names without looking in the hat. The names of all participants were coded to ensure confidentiality.

Data Collection Instrument

The data collection method employed in this research was a 20-item questionnaire (see Appendix A). Using questionnaires in quantitative studies as data collection tools is well documented (Masutha, 1999; Ackermann, 1999; Mabeba & Prinsloo, 2000). A questionnaire is a collection of written self-report items to be responded to by a chosen group of participants (Gay et al., 2011). A questionnaire was appropriate for this study as it allowed for the collection of large amounts of data about the participants over a short period (Gay et al., 2011). The constructs investigated in this study through this questionnaire have been subjected to rigorous validity and reliability tests as documented in the literature. The instrument was designed based on the categories: knowledge (items 8-16), attitudes (items 17-18), and practices (items 19-20). Thus, 20 items were used for the knowledge, attitudes, and practices questionnaire. The variables measuring knowledge reached a reliability statistic of .700, attitudes .661, and practices .680. According to Ursachi et al. (2013), a generally accepted rule is that a reliability statistic of 0.6-0.7 indicates an acceptable level of reliability.

This self-report instrument was designed using measuring scales such as the Likert scale, multiple-choice, and Yes-No dichotomous questions. The research team had to create the questionnaire to capture the intended variables. This matter was necessary as an extensive perusal of the literature yielded no instrument that measured all the variables in the manner intended by this study. The literature of various studies served as the framework for constructing this questionnaire. Care was taken to ensure appropriate measures were undertaken to analyse the data. Also, regarding the validity and reliability of the research instrument, various experts in statistics, public health, and education were consulted to assess its validity.

Validity

Validity and reliability must be reported in a study at this level as they are essential in ensuring the findings are credible and accurate (Gibbs, as cited in Creswell, 2014). Validity and reliability strengthen quantitative research such as this present study and will be important in determining the accuracy of the findings by utilising the procedures outlined in the reliability and validity subsections.

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Validity measures the extent to which an instrument measures what it was designed to measure based on its psychological nature or the characteristics being measured (Leacock et al., 2015). For this questionnaire, face validity was assured by ensuring that the instrument resembles those commonly used (Leacock et al., 2015) to examine the level of knowledge, attitudes, and practices of airliners and baggage handlers towards the use of permethrin insecticide on aircraft. The research team sought to establish face validity by soliciting expert reviews of the instrument, such as those of my lecturers and other experts in the field. The professors who facilitated the research courses the research team pursued also reviewed the instrument for face and content validity. In addition, a group of participants, similar to the prospective participants, were asked to examine the items on the questionnaire to check for pitfalls in the questionnaire. They were asked to investigate the soundness of the instrument's mechanical features, such as grammar, content, quality of items, and construct validity. Participants' and experts' feedback was taken and used to revise the instrument where necessary.

Content validity was also addressed to ensure the instrument measured the areas it intended to measure (Leacock et al., 2015). This matter was important as experts should indicate content validity (Gay & Airasian, 2000). Thus, the items on the instrument were matched with the objectives of the items, and a table of specifications was developed detailing the areas to be tested, the level at which they were to be tested, and the number of items to be included in that area (Leacock et al., 2015). Again, experts were consulted to ascertain how well the content of the test matched its objectives. The experts were asked to assess the extent to which the instrument sampled the content under investigation and the extent to which internal consistency exists among the items. To determine the validity of the questionnaire instrument, the data set was subjected to a correlation matrix, linearity, and outliers, which may affect the statistics in subsequent data analysis.

Reliability

Reliability is a measure of the consistency of an instrument in measuring what it was intended to measure (Leacock et al., 2009). The authors further suggested that consistency should ensure that similar results are obtained each time the instrument is administered to a group or similar groups. The questionnaire was subjected to Cronbach's alpha, which confirmed the internal consistency of the items and ensured the instrument's reliability. According to Bastick and Matalon (2007), Cronbach's alpha is based on the average correlation of the number of questions on the instrument to ascertain if they are measuring the same construct. Pallant (2004) asserted that a Cronbach’s alpha of 0.7 and above is acceptable. The reliability analyses were used to determine whether the scales were suitable for measuring the intended variables. The preliminary Cronbach alpha results obtained from these reliability tests were used to determine each scale's general suitability and the individual items' suitability. In constructing this instrument, unfavourable items were culled from the data set and the particular analysis until the instrument yielded an acceptable Cronbach Alpha. The variables measuring knowledge reached a reliability statistic of .700, attitudes .661, and practices .680. According to Ursachi et al. (2013), a generally accepted rule is that a

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reliability statistic of 0.6-0.7 indicates an acceptable level of reliability. Pallant (2004) suggested that a Cronbach of 0.7 and above is sufficient.

Data Collection Procedures

The study's authorisation was sought, and approval was received from the Institutional Review Board (IRB) of Northern Caribbean University (see Appendix B). Also, through a letter, permission was sought and received from the university's principal, the bank's manager, and the participants to conduct the study in their organisations. The selection of the participants was done using a random sampling technique. Following the random sample selection, an email was sent to each prospective participant seeking their participation in the research project. Having secured the participants' permission, arrangements were made to collect data using the questionnaire constructed. Therefore, questionnaires were administered and handed out to the participants, who completed and returned the questionnaires at their convenience. Data collection took place in one week.

Data Analysis Procedure

After data collection, the data were analysed using quantitative techniques. The quantitative data garnered were imported into the Statistical Package for the Social Sciences (SPSS) software. Thus, weighted means and standard deviation were computed to ascertain the knowledge, attitudes, and practices of airliners and baggage handlers towards using permethrin insecticide on aircraft. Independent-sample t-test and ANOVA were used to determine if there were significant differences in knowledge, attitudes, and practices of airliners and baggage handlers towards using permethrin insecticide on aircraft. Then, they were grouped according to gender, age group, job status, tenure, academic training, and occupation. In addition, Pearson Product-Moment Correlation Coefficients were carried out to identify if there is a statistically significant relation between monthly income and knowledge, attitudes, and practices of airliners and baggage handlers towards the use of permethrin insecticide on aircraft. This phenomenon allowed the research team to discover the extent of the relationships among the variables, the nature and strength of the relationships, their potential influence on each other, and the potential for impacting the overall study. Furthermore, this made it possible to explore differences in the relationships among variables for selected categories of variables. In addition, tables and figures were used to present the quantitative data.

Ethical Considerations

Ethics is a critical consideration in research of this status, especially concerning human subjects. To reduce psychological stress for the subjects while providing freedom of choice, informed consent must be employed as the most effective tool (Stangor, 1998). With this awareness, efforts were made to ensure the complete protection of human subjects by seeking and obtaining permission from clients and managers to participate in the research process and to release clients' email addresses. Participants were informed of their right to withdraw from the research process at any time, and information obtained would be kept strictly confidential.

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Thus, the study was not experimental; no harm was brought to any of the sampled participants. The survey sought to determine employees' perception of the level of job satisfaction that they experience and the efforts they believe management is taking to retain them. The institution's manager was informed of the purpose of the study and that the process was voluntary. All confidentiality was upheld. Therefore, the electronically saved data was safely deleted after all analyses had been conducted and the research report was written. The hard copies of any data collected were shredded and discarded safely.

Data Analysis, Presentation, Interpretation and Discussion

Description of the Respondents

This section of the chapter presents the demographic data of the participants, such as gender, highest degree obtained, and length of service. This information is presented in the tables below.

Gender of airliners and baggage handlers

A frequency distribution was computed for the gender of the study participants. Table 4.0 shows the results. It revealed that 49 (68.1%) of the respondents in this study were males, while 23 (31.9%) were females. The frequency indicates that there were 26 (32.6 %) more male respondents than females, suggesting that most airliners and baggage handlers were males.

Table 4.0: Gender of Pre-service Education Students

Gender of airliners and baggage handlers			
		Frequency	**Per cent**
Valid	Male	49	68.1
	Female	23	31.9
	Total	72	100.0

A frequency distribution was computed for the age group of airliners and baggage handlers. Table 4.1 shows the results. It revealed that: 18-29 years 21 (29.2%), 30-39 years 21(29.2%), 40-55 years 19(26.4%), and 55+ years 11(15.3%). It shows that most airliners and baggage handlers were in the 18-29 and 30-39 age groups.

Table 4.1: Gender of Pre-service Education Students

Age Group of airliners and baggage handlers			
		Frequency	**Per cent**
Valid	18-29 years	21	29.2
	30-39 years	21	29.2
	40-55 years	19	26.4
	55+ years	11	15.3
	Total	72	100.0

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A frequency distribution was computed for the job status Of airliners and baggage handlers. Table 4.2 shows the results: 23 (31.9%) were full-time, 24 (33.3%) were part-time, and 25 (34.7%) were contract workers. Thus, the majority of the airliners and baggage handlers were contract workers.

Table 4.2: Gender of Pre-service Education Students

Job Status of airliners and baggage handlers					
		Frequency	Per cent	Valid Percent	Cumulative Percent
Valid	Full time	23	31.9	31.9	31.9
	Part-time	24	33.3	33.3	65.3
	Contract worker	25	34.7	34.7	100.0
	Total	72	100.0	100.0	

A frequency distribution was computed for the job status of airliners and baggage handlers. Table 4.3 shows the results. The respondents indicated: 0 -5 years 33 (45.8%); 6-10 years19 (26.4%); 11-15 years8 (11.1%); 16-20 years 7 (9.7%) and Over 20 years 5 (6.9%).

Table 4.3: ender of Pre-service Education Students

Tenure of airliners and baggage handlers			
		Frequency	**Per cent**
Valid	0 -5 years	33	45.8
	6-10 years	19	26.4
	11-15 years	8	11.1
	16-20 years	7	9.7
	Over 20 years	5	6.9
	Total	72	100.0

Table 4.4 shows the educational level of respondents who participated in the study. It revealed that the majority, 26 (36.1%), hold a certificate, 30 (30.6%) hold a bachelor's degree, 4 (5.6%) hold a master's degree, 4 (5.6%) hold a doctoral degree, and 16 (22%) indicated other. This shows that most staff need to improve their qualifications academically.

Table 4.4: ender of Pre-service Education Students

Highest level of academic training of airliners and baggage handlers			
		Frequency	**Per cent**
Valid	Certificate	26	36.1
	Bachelor’s degree	22	30.6
	Master’s degree	4	5.6
	Ph.D.	4	5.6
	Other	16	22.2
	Total	72	100.0

Table 4.5 shows the educational level of respondents who participated in the study. It revealed that baggage handlers represented 14 (19.4%), security guards represented 22

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(30.6%), airline crew represented 19 (26.4%), ground agents represented 9 (12.5%), and aircraft cleaners represented 8 (11.1%). This shows that most of the staff, 22 (30.6%), were security guards.

Table 4.5: ender of Pre-service Education Students

Occupation of airliners and baggage handlers			
		Frequency	Per cent
Valid	Baggage handler	14	19.4
	Security guard	22	30.6
	Airline crew	19	26.4
	Ground agent	9	12.5
	Aircraft Cleaner	8	11.1
	Total	72	100.0

Presentation of Specific Data

Research question one: What is the knowledge, attitude, and practice of airliners and baggage handlers regarding using permethrin insecticide on aircraft?

Descriptive statistics were used in tabular form using a Yes-No dichotomous scale to answer research question one. Respondents were asked to rate the knowledge, attitudes, and practices of airliners and baggage handlers regarding using permethrin insecticide on aircraft by choosing YES or NO.

Interpretation Scale on Knowledge

The interpretation scale that was used for the responses of airliners and baggage handlers was as follows:

0.0-.66 Low knowledge

0.67-1.34 Moderate knowledge

1.35-2.00 High knowledge

Level of Knowledge

The findings in Table 4.6 show the mean rating of knowledge of airliners and baggage handlers towards the use of permethrin insecticide on aircraft is = 11.90; SD= 1.59 to indicate that the respondents indicated that they have a high level of knowledge and will remain to have a high level of expertise. In addition, six of the nine items measuring airliners and baggage handler's knowledge were rated high, supporting the overall mean for expertise. These were "*Repeated non-compliance to the administration of Permethrin in the disinsection of aircraft would increase the movement of potentially invasive or disease-carrying insects*" (M = 1.47, S.D. = .05); "*Residual treatments with Permethrin lasts for two weeks.*" (M = 1.56, S.D. = .05); "*Application of Permethrin can be aerosol delivered from spray cans or residual treatments using emulsifiable concentrates.*" (M = 4.25, S.D. = .96); "*Permethrin is only*

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effective for reducing the spread of virus-carrying vectors" (M = 1.69, S.D. = .46); "*It is safe to use permethrin at home*." (M = 1.53, S.D. = .50), and "*Limiting inappropriate use of Permethrin plays an important role in preventing the spread of disease-carrying insects.*" (M = 1.51, S.D. = .77). On the other hand, 3 of the 9 items measuring airliners and baggage handler's knowledge were rated high, supporting the overall mean for expertise. These were ". *Permethrin should be purchased with a doctor's prescription*" (M = 1.34, S.D. = .49); "*Permethrin is an insecticide.*" (M = 1.53, S.D. = .50), and "*I think that it is necessary to get further information regarding Permethrin use.*." (M = 1.53, S.D. = .47). These statements are pointing to the fact that the respondents will seek to improve on their knowledge on permethrin application.

Table 4.6: *Airliners and Baggage Handlers Knowledge* towards the use of permethrin insecticide on aircraft

	N	Mean	Std. Deviation	Interpretation
8. Repeated non-compliance to the administration of permethrin in the disinsection of aircraft would increase the movement of potentially invasive or disease-carrying insects	72	1.47	.50	High
9. Residual treatments with permethrin last for two weeks.	72	1.56	.50	High
10. Application of Permethrin can be aerosol delivered from spray cans or residual treatments using emulsifiable concentrates.	72	1.46	.50	High
11. Permethrin is only effective for reducing the spread of virus-carrying vectors	72	1.69	.46	High
12. Permethrin should be purchased with a doctor's prescription.	72	1.34	.49	Moderate
13. Permethrin is an insecticide.	72	1.32	.47	Moderate
14. It is safe to use permethrin at home.	72	1.53	.50	High
15. It is necessary to get further information regarding Permethrin use.	72	1.32	.47	Moderate
16. Limiting inappropriate use of permethrin is vital in preventing the spread of disease-carrying insects.	72	1.51	.77	High
Total Knowledge	**72**	**11.90**	**1.59**	**High**
Valid N (listwise)	72			

Level of attitude

The interpretation scale that was used for the responses of Airliners and Baggage Handlers Attitudes were as follows:

1.00-2.33 Low Attitude

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2.34-3.67 Moderate Attitude

3.68-5.00 High Attitude

The findings in Table 4.7 show that the mean rating of the attitude of airliners and baggage handlers towards the use of permethrin insecticide on aircraft is = 4.17; SD= 1.74 to indicate that the respondents indicated that they have a high level of attitude toward permethrin use and will remain to have a high level of attitude. In addition, the two items measuring airliners and baggage handlers' attitudes were rated moderate, supporting the overall mean for knowledge. These were "*Repeated non-compliance to the administration of Permethrin in the disinsection of aircraft would increase the movement of potentially invasive or disease-carrying insects*" (M = 1.47, S.D. = .05) and "*More expensive disinfectants are more effective and have fewer side effects than Permethrin.*" (M = 2.69, SD = 1.32). These statements indicate that the respondents will seek to improve their attitude towards permethrin application.

Table 4.7: *Airliners and Baggage Handlers' Attitude* towards the use of Permethrin insecticide on aircraft

	N	Mean	Std. Deviation	Interpretation
17. The safety material data sheet instructions for applying Permethrin concern to the workers.	72	2.82	1.49	Moderate
18. More expensive disinfectants are more effective and have less side effects than Permethrin	72	2.69	1.32	Moderate
Total attitude	**72**	**4.17**	**1.74**	**High**
Valid N (listwise)	72			

Level of Practice

The interpretation scale that was used for the responses of Airliners and Baggage Handlers Practices were as follows:

1.00-2.33 Low Practice

2.34-3.67 Moderate Practice

3.68-5.00 High Practice

The findings in Table 4.8 show that the mean rating of the practice of airliners and baggage handlers towards using permethrin insecticide on aircraft is = 2.51; SD= .82 to indicate that the respondents have a moderate level of practice towards permethrin use. In addition, the two items measuring airliners and baggage handler's practice were rated low, supporting the overall mean for knowledge. These were "*I have experienced adverse reactions in the application of Permethrin.*" (M = 1.47, S.D. = .05) and "*I often adhere to the time allotted for the residual effect of permethrin before entering areas after application*" (M = 1.54, S.D.

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= .65). These statements are pointing to the fact that the respondents will seek to improve on their practice towards permethrin application.

Table 4.8: *Airliners and Baggage Handlers Practices* towards the use of permethrin insecticide

	N	Mean	Std. Deviation	Interpretation
19. I have experienced adverse reactions in the application of Permethrin.	72	1.		permethrin
20. I often adhere to the time allotted for the residual effect of permethrin before permethrin areas after application	72	1.54	.65	Low
Total practices	**72**	**2.51**	**.82**	**Moderate**
Valid N (listwise)	72			

Findings

1. Airliners and baggage handlers have a high level of knowledge about using permethrin insecticide on aircraft.
2. Airliners and baggage handlers have a high attitude towards using permethrin insecticide on aircraft.
3. Airliners and baggage handlers have a moderate level of practice towards using permethrin insecticide on aircraft. These ratings of statements measuring practice showed that participants seek to improve their practice towards using permethrin insecticide on aircraft.

Research Question Two: Are there significant differences in knowledge, attitudes, and practices of airliners and baggage handlers towards the use of permethrin insecticide on aircraft when they are grouped according to gender, age group, job status, tenure, academic training, and occupation? This research question required the test of a hypothesis which states: "There are no significant differences in knowledge, attitudes, and practices of airliners and baggage handlers towards the use of permethrin insecticide on aircraft when they are grouped according to gender, age group, job status, tenure, academic training, and occupation.

A one-way between-groups analysis of variance and an independent-sample t-test were conducted to test this hypothesis. The results are outlined below in Table 4.9, showing the T and F-test results of the effects of demographic variables on the knowledge, attitudes, and practices of airliners and baggage handlers regarding the use of permethrin insecticide on aircraft.

Gender. The results show that gender has no significant impact on airliners' and baggage handlers' knowledge about using permethrin insecticide on aircraft (t = -.594, p = -.554), attitude (t = .847, p = .400), and practice (t = .063, p = .950) (see appendices A—F).

Age. The results show that age has no significant impact on knowledge (F = .680, p = .969), attitude (F = .213, p = .887), and practice (F = .844, p = .950) (see appendices G—L).

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Job status. Status has no significant impact on knowledge, F = 2.466, p = .092, attitude F = .953, p = .391, practice F= .343, p = .711 (see appendices M-Q)).

Tenure. Tenure has no significant impact on knowledge, F = .410, p = .801, and attitude, F = 1.911, p = .119 (see appendices Q—T). However, tenure significantly impacts practice, F = 2.825, p = .032 (appendix V). These differences exist between 0-5 and 6-10 years (appendix W). This implies that the first five years of a worker's tenure are critical in honing the organisation's culture and work ethic.

Education. Education has no significant impact on knowledge, F = 1.402, p = .392; attitude F= .406, p = .804 and practice F = .365, p = .639 (see appendices X-C2).

Occupation. Occupation does not significantly impact knowledge (t = 1.612, p = .182) and practice (t = 1.147, p = .342). However, it significantly impacts attitude (t = 2.574, p = .053).

Table 4.9: ***T and F- Test results of the effects of demographic variables on the outcome variables***

Variables		Knowledge				Attitude				Practices			
		X	S.D	F & T-test	P value	x̄	S.D	F & T-test	P value	X	S.D	T & F-test	P value
Gender	male	11.83	1.51	-.594	-.554	4.29	1.73	.847	.400	2.51	1.09	.063	.950
	female	12.07	1.78			3.91	1.76			2.50	.43		
Age	18-29	11.59	1.55	.680	.969	4.38	.43	.213	.887	2.57	.93	.844	.474
	30-39	11.97	11.71			3.95	1.45			2.69	.89		
	40-55	11.87	1.46			4.13	1.55			2.32	.75		
	55+	2.43	1.71			4.23	2.19			2.36	.55		
Job Status	Full-time	11.31	1.34	2.466	.092	3.76	1.57	.953	.391	2.39	.37	.343	.711
	Part-time	12.16	1.11			4.29	1.56			2.54	1.04		
	Contract	12.20	2.15			4.20	2.03			2.58	.89		
Tenure	0-5	11.97	1.82	.410	.801	4.27	1.73	1.911	.119	2.32	.53	2.825	.032
	6-10	11.64	1.94			4.76	1.62			3.00	1.25		
	11-15	11.83	.94			3.00	1.31			2.56	.49		

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	16-20	12.52	1.15			4.00	1.78			2.21	.39		
	>20	11.73	1.52			3.30	3.14			2.20	.57		
Education	Certificate	12.32	1.75			4.38	1.77			2.50	.92		
	BA	11.39	1.41	1.402	.392	3.95	1.65	.406	.804	2.70	.87	.365	.639
	MA	12.17	1.22			4.13	1.70			2.38	.25		
	Ph.D.	11.86	1.71			3.38	.85			2.50	.41		
	Other	11.86	1.59			4.31	2.05			2.28	.75		
Occupation	Baggage handler	12.10	1.38	1.612	.182	5.03	1.87	2.475	.053	2.89	1.52	1.147	.342
	Security guard	11.55	1.89			4.23	1.79			2.45	.51		
	Airline crew	11.51	1.09			3.76	1.53			2.37	.44		
	Ground agent	12.52	1.51			4.61	1.78			2.56	.63		
	Aircraft cleaner	12.78	1.59			2.94	.98			2.25	.59		

Findings

1. It was found that gender, age, job status, and education have no significant impact on airliners' and baggage handlers' knowledge, attitude, and practice regarding using permethrin insecticide on aircraft.
2. Tenure has no significant impact on knowledge and attitude.
3. Tenure significantly impacts practice (F=2.825, p = .032). These differences exist between 0-5 years and 6-10 years. This implies that the first five years of a worker's tenure are critical in honing the organisation's culture and work ethic.
4. Occupation has no significant impact on knowledge and practice.
5. Occupation significantly impacts attitude (t = 2.574, p = .053).

Research Question Three: Is there a statistically significant relationship between monthly income and knowledge, attitudes, and practices of airliners and baggage handlers towards using permethrin insecticide on aircraft? This research question required a hypothesis test: "There is no statistically significant relationship between monthly income and knowledge, attitudes, or practices of airliners and baggage handlers towards the use of permethrin insecticide on aircraft."

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The research team used the Pearson Product Moment Correlation Coefficient to test the null hypothesis. To describe the strength of the correlation, the research team used the guide by Role (2016), suggesting the absolute value of r as:

- Strong positive correlation ($0.8 \leq r < 1$)
- Moderate positive correlation ($0.3 < r < 0.8$)
- Weak positive correlation ($0 < r \leq 0.3$)
- Strong negative correlation ($-1 < r \leq -0.8$)
- Moderate positive correlation ($-0.8 < r < -0.3$)
- Weak negative correlation ($-0.3 \leq r < 0$)

Table 4.9.1 shows the Pearson product-moment correlation conducted to determine the relationship between monthly income, knowledge, attitudes, and practice. The *r*= -.269, p = 022, shows a weak negative relationship between monthly income and attitude. The analysis shows a significant statistical relationship between monthly income and attitude because the p=.022 < 0.05.

Also, there is a weak negative relationship between monthly income and practice.

(r= -.184, p = .123) weak positive relationship between monthly income and knowledge (r= -.154, p = .196).

Table 4.9.1: Pearson Product-Moment Correlations: Monthly Income, Knowledge, Attitudes and Practice

Total attitude	Pearson Correlation	-.269*
	Sig. (2-tailed)	.022
	N	72
Total practices	Pearson Correlation	-.184
	Sig. (2-tailed)	.123
	N	72
Total knowledge	Pearson Correlation	.154
	Sig. (2-tailed)	.196
	N	72
*. Correlation is significant at the 0.05 level (2-tailed).		

Findings

1. a weak negative statistically significant relationship exists between monthly income and attitude (r= -.269, p = 022). This would suggest that as income increases, attitude decreases. Also, a weak negative relationship exists between monthly income and practice (r= -.184, p = .123) and a weak positive relationship between monthly income and knowledge (r= -.154, p = .196).

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Interpretation and Discussion

It was found that airliners and baggage handlers have a high knowledge of using permethrin insecticide on aircraft. Likewise, previous studies on infectious disease infection prevention and transmission showed that knowledge and awareness are critical factors in public health safety and disease control (Lin et al., 2020; Aburto et al.; 2010; Brug et al.; 2004; de Zwart et al., 2010). Risk perception and efficacy belief are other cognitive and knowledge-related factors that motivate workers to adopt preventive behaviours. Similarly, recent studies on COVID-19 revealed that knowledge (Azlan, Hamzah, Sern, Ayub, Mohamad, 2020; Saefi, Fauzi, Kristiana, Adi, Muchson, Setiawan, Islami, Ningrum DEAF, Ikhsan, Ramadhani, 2020. Also, the research found that knowledge of perceived controllability, optimistic beliefs, emotion, and risk perception may be associated with the precautionary actions of the public.

Another finding was that airliners and baggage handlers have a high attitude toward using permethrin insecticide on aircraft. Similarly, Lee and You (2019) believe that when aircraft workers collectively engage in preventive behaviours, including practising personal hygiene and maintaining best practices in disinfection, it is possible to control the spread of diseases. Accordingly, other studies highlighted that individual behaviours might dramatically decrease morbidity and mortality rates of COVID-19 (Ferguson et al., 2020; Lin et al., 2020; Aburto et al., 2010). Therefore, routine preventive behaviours among aircraft workers must become the new status quo at airports. For public health interventions and ministry policy to successfully encourage and sustain preventive behaviours among the workers, evidence on social, cognitive, and psychological factors associated with the behaviours is necessary.

Additionally, it was found that airliners and baggage handlers have a moderate level of practice towards using permethrin insecticide on aircraft. These ratings of statements measuring practice showed that participants seek to improve their practice towards using permethrin insecticide on aircraft. In the same breath, it is essential to read the instructions on the product label to determine what safety precautions are necessary while using the product. This could include personal protective equipment (PPE), such as gloves, glasses, or goggles, additional ventilation, or other precautions (Tichenor et al., 1970; Bekalu & Eggermont, 2014; Viswanath et al., 1993; Lee, 2009). When applying disinfectants, following the directions on the label is recommended to ensure safe and effective use of the product.

Another finding was that gender, age, job status, and education do not significantly impact airliners and baggage handlers' knowledge, attitude, and practice of using permethrin insecticide on aircraft. Unlike this study, Briss, Rimer, Reilley, Coates, Lee, Mullen, Corso, Hutchinson, Hiatt, and Kerner (2004) suggest that knowledge gaps and behavioural patterns among sociodemographic subgroups are critical in understanding and reducing equality in health care. This information is essential to implement effective public health interventions. Comparison can be drawn from the novel influenza A (H1N1) burden, which was substantially higher for people who were less educated (van den Berg, Timmermans, ten Kate, van Vugt, van der Wal, 2006; Ashrafi-Rizi, Kazempour, 2020) and lived in more deprived neighbourhoods (Briss et al., 2004; Rimer et al., 2004; van den Berg et al., 2006; Ashrafi-Rizi & Kazempour, 2020). Another evidence in contrast to this study is the case of the 2015

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Middle East Respiratory Syndrome (MERS), where Brennen, Simon, Howard, Nielsen (2020) and Gao, Hu, Yin, Yuan, Tang, Luo, Chen, Huang, Wang, Yu (2020) have shown that social determinants were directly (gender, education) or indirectly (age, education) related to practising preventive behaviours. Behavioural factors associated with COVID-19 are also unevenly distributed among people. Similar studies have shown that males, less educated individuals, and older people showed lower COVID-19 knowledge and behaviours than their counterparts, and risk perception varied by the level of social support (Rimal, Lapinski, 2009).

It was also found that tenure has no significant impact on knowledge and attitude. However, tenure substantially impacts practice ($F=2.825$, $p = .032$). These differences exist between 0-5 years and 6-10 years. This implies that the first five years of a worker's tenure are critical in honing the organisation's culture and work ethic.

It was found that occupation has no significant impact on knowledge and practice. However, occupation significantly impacts attitude ($t = 2.574$, $p = .053$). Similarly, Mobasheri, Ramezani, and Khaledifar (2013) believe that professions, including teaching, are essential in health education in transferring health knowledge, attitude, and practice (KAP) to the public. Therefore, people from diverse occupations must have an adequate understanding of, a high attitude toward, and appropriate training in health education techniques.

Additionally, it was found that there is a weak negative statistically significant relationship between monthly income and attitude ($r= -.269$, $p = 022$). This would suggest that as income increases, attitude decreases. Also, a weak negative relationship exists between monthly income and practice ($r= -.184$, $p = .123$) and a weak positive relationship between monthly income and knowledge ($r= -.154$, $p = .196$). Similarly, Brennen et al. (2020) and Gao et al. (2020) have shown that, indirectly, income is related to practising preventive behaviours.

Summary of the Study

This study examined the knowledge, attitudes, and practices of airliners and baggage handlers towards using permethrin insecticide on aircraft. It sought to identify if there is a significant difference in knowledge, attitudes, and practices of airliners and baggage handlers towards using permethrin insecticide on aircraft when grouped according to gender, age group, job status, tenure, academic training, and occupation. This study employed a quantitative approach designed as an ex post facto research and was causal-comparative. The population of this research comprised airliners and baggage handlers of Norman Manley International Airport (NMIA). NMIA airline service operators include Goddard Catering Group, Ajas, Eulen, Airways International and Airlift handlers. These providers employ workers on a permanent and contractual basis. The research sample was randomly selected from airliners and baggage handlers of Norman Manley International Airport.

One hundred (100) 184 employees were invited to participate in this study. This type of organisation was conveniently selected due to its availability to the research team; the process included selecting an organisation to which she is employed. The data collection method used in this research was a 20-item questionnaire (see Appendix A). The instrument was designed

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based on the categories: knowledge (items 8-16), attitudes (items 17-18), and practices (items 19-20). Thus, 20 items were used for the knowledge, attitudes, and practices questionnaire. The variables measuring knowledge reached a reliability statistic of 0.700, attitudes were 0.661, and practices were 0.680. According to Ursachi, Alexandra-Horodnic, and Zait (2013), a generally accepted rule is that a reliability statistic of 0.6-0.7 indicates an acceptable level of reliability. The study's authorisation was sought, and approval was received from the Institutional Review Board (IRB) of Northern Caribbean. Also, through a letter, permission was sought and received from the university's principal, the bank's manager, and the participants to conduct the study in their organisations. The selection of the participants was done using a random sampling technique. Following the random sample selection, an email was sent to each prospective participant seeking their participation in the research project. Having secured the participants' permission, arrangements were made to collect data using the questionnaire constructed. Therefore, questionnaires were handed out to the participants, who completed and returned them at their convenience. Data collection took place in one week.

The quantitative data garnered were imported into the Statistical Package for the Social Sciences (SPSS) software. Thus, weighted means and standard deviation were computed to ascertain the knowledge, attitudes, and practices of airliners and baggage handlers towards using permethrin insecticide on aircraft. Independent-sample t-test and ANOVA were used to determine if there were significant differences in knowledge, attitudes, and practices of airliners and baggage handlers towards using permethrin insecticide on aircraft. Then, they were grouped according to gender, age group, job status, tenure, academic training, and occupation. In addition, Pearson Product-Moment Correlation Coefficients were run to identify if there is a statistically significant relation between monthly income and knowledge, attitudes, and practices of airliners and baggage handlers towards the use of permethrin insecticide on aircraft. Participants were informed they could withdraw from the research process, and information obtained would be kept strictly confidential. Thus, the study was not experimental; no harm was brought to any sampled participants. The survey sought to determine employees' perception of the level of job satisfaction that they experience and the efforts they believe management is taking to retain them. The institution's manager was informed of the purpose of the study and that the process was voluntary. All confidentiality was upheld.

Conclusions

It was concluded that airliners and baggage handlers have a high knowledge and attitude towards using permethrin insecticide on aircraft. In addition, airliners and baggage handlers have a moderate level of practice towards using permethrin insecticide on aircraft. It was also concluded that gender, age, job status, and education do not significantly impact the knowledge, attitude, or practice of airliners and baggage handlers regarding using permethrin insecticide on aircraft. In addition, it was concluded that tenure has no significant impact on knowledge and attitude but substantially impacts practice between 0-5 years and 6-10 years. Thus, it was concluded that the first five years of workers' tenure are critical in honing the culture and work ethics of the organisation. Likewise, occupation does not significantly impact knowledge and

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practice but significantly affects attitude. In the same breath, it was concluded that there is a weak, harmful, statistically significant relationship between monthly income and attitude. This would suggest that as income increases, attitude decreases. In addition, there is a weak negative relationship between monthly income and practice and a weak positive relationship between monthly income and knowledge.

Recommendations for Practice

1. It was found that airliners and baggage handlers have a high level of knowledge about using permethrin insecticide on aircraft. It was recommended that in the Ministry of Health and Wellness drive for infectious disease infection prevention and transmission; they must focus on knowledge and awareness as key factors in public health safety and disease control
2. It was also recommended that the airport administrators conduct workshops to enhance workers' risk perception and efficacy beliefs and motivate them to adopt preventive behaviours.
3. It was also found that airliners and baggage handlers have a high attitude towards using permethrin insecticide on aircraft. Therefore, it was recommended that aircraft workers collectively and individually engage in preventive behaviours, including practising personal hygiene and maintaining best practices in disinfection, to control the spread of diseases and infections.
4. It was recommended that precautionary behaviours among aircraft workers become the new status quo at airports. Evidence on social, cognitive, and psychological factors associated with these behaviours is recommended for public health interventions and ministry policy to encourage and sustain preventive behaviours among workers successfully.
5. Additionally, it was found that airliners and baggage handlers have a moderate level of practice using permethrin insecticide on aircraft. These rating statements measuring practice showed that participants seek to improve their practice. In the same breath, it was recommended that workers read the instructions on the product label to determine what safety precautions are necessary while using products.
6. It was also found that tenure has no significant impact on knowledge and attitude. However, tenure has a substantial impact on practice. These differences exist between 0-5 years and 6-10 years. This implies that the first five years of a worker's tenure are critical in honing the organisation's culture and work ethic. It was recommended that supervisors focus on developing workers' understanding of the organisation's culture and ethos in the first five years of employment.

Recommendations for Further Research

1. Another finding was that gender, age, job status, and education do not significantly impact airliners' and baggage handlers' knowledge, attitude, and practice regarding using permethrin insecticide on aircraft. Therefore, it was recommended that further research be done to understand the knowledge gaps and behavioural patterns among sociodemographic subgroups and reduce inequality in health care.

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2. Future research could replicate this study using a larger sample size, in which intrinsic and extrinsic factors influencing employees' knowledge, attitude, and practice could be surveyed longitudinally throughout their tenure.
3. Because the literature on the subject was scarce, the literature reviewed germinated from other developing and developed economies. Thus, future studies could gather data on airliners' and baggage handlers' knowledge, attitudes, and practices regarding using permethrin insecticide on aircraft.
4. The study's sample consisted of workers from only one airport. Therefore, the findings may not be generalised to other airports. Hence, further study could include a larger sample size and additional airport workers.

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Appendices

Appendix A: Group Statistics for Gender and Knowledge

	1.1 Gender	N	Mean	Std. Deviation
Knowledge	Male	49	11.8277	1.51180
	Female	23	12.0676	1.77327

Appendix B: Independent Samples Test for Gender and Knowledge

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Knowledge	Equal variances assumed	.030	.863	-.594	70	.554	-.23997	.40406	-1.04583	.56589
	Equal variances not assumed			-.560	37.568	.579	-.23997	.42821	-1.10715	.62722

Appendix C: Group Statistics for Gender and Attitude

	1.1 Gender	N	Mean	Std. Deviation
Total attitude	Male	49	4.2857	1.73205
	Female	23	3.9130	1.76231

Appendix D: Independent Samples Test for Gender and Attitude

	Levene's Test for Equality of Varianc	t-test for Equality of Means

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		es								
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Total attitude	Equal variances assumed	.001	.973	.847	70	.400	.37267	.44021	-.50529	1.25064
	Equal variances not assumed			.841	42.471	.405	.37267	.44301	-.52106	1.26640

Appendix E: Group Statistics for Gender and Practices

	1.1 Gender	N	Mean	Std. Deviation
Total practices	Male	49	2.5102	.95465
	Female	23	2.5000	.42640

Appendix F: Independent Samples Test for Gender and Practices

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Total practices	Equal variances assumed	5.414	.023	.049	70	.961	.01020	.20875	-.40613	.42654

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	Equal variances not assumed			.063	69.917	.950	.01020	.16280	-.31450	.33491

Appendix G: Descriptive Statistics for Age Group and Knowledge

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean	
					Lower Bound	Upper Bound
18-29 years	21	11.5926	1.55331	.33896	10.8855	12.2996
30-39 years	21	11.9683	1.71131	.37344	11.1893	12.7472
40-55 years	19	11.8713	1.46203	.33541	11.1667	12.5760
55+ years	11	12.4343	1.71014	.51563	11.2855	13.5832
Total	72	11.9043	1.59128	.18753	11.5304	12.2783

Appendix H: ANOVA for Age Group and Knowledge

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	5.237	3	1.746	.680	.567
Within Groups	174.548	68	2.567		
Total	179.785	71			

Appendix I: Descriptive Statistics for Age Group and Attitude

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean	
					Lower Bound	Upper Bound
18-29 years	21	4.3810	1.98686	.43357	3.4765	5.2854
30-39 years	21	3.9524	1.44832	.31605	3.2931	4.6116
40-55 years	19	4.1316	1.55315	.35632	3.3830	4.8802
55+ years	11	4.2273	2.19504	.66183	2.7526	5.7019
Total	72	4.1667	1.73814	.20484	3.7582	4.5751

Appendix J: ANOVA for Age Group and Attitude

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	1.992	3	.664	.213	.887
Within Groups	212.508	68	3.125		
Total	214.500	71			

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Appendix K: Descriptive Statistics for Age Group and Practices

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean	
					Lower Bound	Upper Bound
18-29 years	21	2.5714	.92582	.20203	2.1500	2.9929
30-39 years	21	2.6905	.88708	.19358	2.2867	3.0943
40-55 years	19	2.3158	.74927	.17189	1.9547	2.6769
55+ years	11	2.3636	.55186	.16639	1.9929	2.7344
Total	72	2.5069	.82005	.09664	2.3142	2.6996

Appendix L: ANOVA for Age Group and Practices

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	1.715	3	.572	.844	.474
Within Groups	46.032	68	.677		
Total	47.747	71			

Appendix M: Descriptive Statistics for Job Status and Knowledge

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean	
					Lower Bound	Upper Bound
Full time	23	11.3092	1.13656	.23699	10.8177	11.8007
Part-time	24	12.1620	1.11351	.22730	11.6918	12.6322
Contract worker	25	12.2044	2.14919	.42984	11.3173	13.0916
Total	72	11.9043	1.59128	.18753	11.5304	12.2783

Appendix N: ANOVA for Job Status and Knowledge

ANOVA					
Total knowledge					
	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	11.992	2	5.996	2.466	.092
Within Groups	167.793	69	2.432		
Total	179.785	71			

Appendix M: Descriptive Statistics for Job Status and Attitude

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean	
					Lower Bound	Upper Bound
Full time	23	3.7609	1.56575	.32648	3.0838	4.4380

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Part-time	24	4.2917	1.55980	.31839	3.6330	4.9503
Contract worker	25	4.4200	2.02937	.40587	3.5823	5.2577
Total	72	4.1667	1.73814	.20484	3.7582	4.5751

Appendix N: ANOVA for Job Status and Attitude

ANOVA					
Total attitude					
	Sum of Squares	**df**	**Mean Square**	**F**	**Sig.**
Between Groups	5.767	2	2.883	.953	.391
Within Groups	208.733	69	3.025		
Total	214.500	71			

Appendix O: Descriptive Statistics for Job Status and Practices

	N	**Mean**	**Std. Deviation**	**Std. Error**	**95% Confidence Interval for Mean**	
					Lower Bound	**Upper Bound**
Full time	23	2.3913	.36793	.07672	2.2322	2.5504
Part-time	24	2.5417	1.04170	.21264	2.1018	2.9815
Contract worker	25	2.5800	.89768	.17954	2.2095	2.9505
Total	72	2.5069	.82005	.09664	2.3142	2.6996

Appendix P: ANOVA for Job Status and Practices

ANOVA					
Total practices					
	Sum of Squares	**df**	**Mean Square**	**F**	**Sig.**
Between Groups	.470	2	.235	.343	.711
Within Groups	47.277	69	.685		
Total	47.747	71			

Appendix Q: Descriptive Statistics for Tenure and Knowledge

	N	**Mean**	**Std. Deviation**	**Std. Error**	**95% Confidence Interval for Mean**	
					Lower Bound	**Upper Bound**
0 -5 years	33	11.9663	1.82288	.31732	11.3200	12.6127
6-10 years	19	11.6433	1.59413	.36572	10.8749	12.4116
11-15 years	8	11.8333	.93906	.33201	11.0483	12.6184
16-20 years	7	12.5238	1.15062	.43489	11.4597	13.5880
Over 20 years	5	11.7333	1.52469	.68186	9.8402	13.6265
Total	72	11.9043	1.59128	.18753	11.5304	12.2783

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Appendix R: ANOVA for Tenure and Knowledge

ANOVA					
Total knowledge					
	Sum of Squares	**df**	**Mean Square**	**F**	**Sig.**
Between Groups	4.295	4	1.074	.410	.801
Within Groups	175.491	67	2.619		
Total	179.785	71			

Appendix S: Descriptive Statistics for Tenure and Attitude

	N	**Mean**	**Std. Deviation**	**Std. Error**	**95% Confidence Interval for Mean**	
					Lower Bound	**Upper Bound**
0 -5 years	33	4.2727	1.73246	.30158	3.6584	4.8870
6-10 years	19	4.7632	1.61906	.37144	3.9828	5.5435
11-15 years	8	3.0000	1.30931	.46291	1.9054	4.0946
16-20 years	7	4.0000	1.77951	.67259	2.3542	5.6458
Over 20 years	5	3.3000	2.13892	.95656	.6442	5.9558
Total	72	4.1667	1.73814	.20484	3.7582	4.5751

Appendix T: ANOVA for Tenure and Attitude

ANOVA					
Total attitude					
	Sum of Squares	**df**	**Mean Square**	**F**	**Sig.**
Between Groups	21.970	4	5.493	1.911	.119
Within Groups	192.530	67	2.874		
Total	214.500	71			

Appendix U: Descriptive Statistics for Tenure and Practices

	N	**Mean**	**Std. Deviation**	**Std. Error**	**95% Confidence Interval for Mean**	
					Lower Bound	**Upper Bound**
0 -5 years	33	2.3182	.52764	.09185	2.1311	2.5053
6-10 years	19	3.0000	1.24722	.28613	2.3989	3.6011
11-15 years	8	2.5625	.49552	.17519	2.1482	2.9768
16-20 years	7	2.2143	.39340	.14869	1.8505	2.5781
Over 20 years	5	2.2000	.57009	.25495	1.4921	2.9079
Total	72	2.5069	.82005	.09664	2.3142	2.6996

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Appendix V: ANOVA for Tenure and Practices

ANOVA					
Total practices					
	Sum of Squares	**df**	**Mean Square**	**F**	**Sig.**
Between Groups	6.890	4	1.723	2.825	.032
Within Groups	40.856	67	.610		
Total	47.747	71			

Appendix W: Multiple Comparisons for Tenure and Practices

Multiple Comparisons						
Dependent Variable: Total practices Tukey HSD						
(I) 1.4 Tenure	**(J) 1.4 Tenure**	**Mean Difference (I-J)**	**Std. Error**	**Sig.**	**95% Confidence Interval**	
					Lower Bound	**Upper Bound**
0 -5 years	6-10 years	-.68182*	.22489	.028	-1.3123	-.0514
	11-15 years	-.24432	.30774	.932	-1.1071	.6184
	16-20 years	.10390	.32495	.998	-.8071	1.0149
	Over 20 years	.11818	.37475	.998	-.9324	1.1688
6-10 years	0 -5 years	.68182*	.22489	.028	.0514	1.3123
	11-15 years	.43750	.32912	.674	-.4852	1.3602
	16-20 years	.78571	.34527	.166	-.1822	1.7537
	Over 20 years	.80000	.39250	.259	-.3003	1.9003
11-15 years	0 -5 years	.24432	.30774	.932	-.6184	1.1071
	6-10 years	-.43750	.32912	.674	-1.3602	.4852
	16-20 years	.34821	.40415	.910	-.7848	1.4812
	Over 20 years	.36250	.44518	.925	-.8855	1.6105
16-20 years	0 -5 years	-.10390	.32495	.998	-1.0149	.8071
	6-10 years	-.78571	.34527	.166	-1.7537	.1822
	11-15 years	-.34821	.40415	.910	-1.4812	.7848
	Over 20 years	.01429	.45725	1.000	-1.2676	1.2962
Over 20 years	0 -5 years	-.11818	.37475	.998	-1.1688	.9324
	6-10 years	-.80000	.39250	.259	-1.9003	.3003
	11-15 years	-.36250	.44518	.925	-1.6105	.8855
	16-20 years	-.01429	.45725	1.000	-1.2962	1.2676
*. The mean difference is significant at the 0.05 level.						

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Appendix X: Descriptive Statistics for the highest level of academic training and Knowledge

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean	
					Lower Bound	Upper Bound
Certificate	26	12.3248	1.74637	.34249	11.6194	13.0302
Bachelor's degree	22	11.3990	1.41033	.30068	10.7737	12.0243
Master's degree	4	12.1667	1.21885	.60943	10.2272	14.1061
PhD	4	11.8611	1.70783	.85391	9.1436	14.5786
Other	16	11.8611	1.59242	.39811	11.0126	12.7097
Total	72	11.9043	1.59128	.18753	11.5304	12.2783

Appendix Y: ANOVA for the highest level of academic training and Knowledge

ANOVA					
Total knowledge					
	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	10.527	4	2.632	1.042	.392
Within Groups	169.258	67	2.526		
Total	179.785	71			

Appendix Z: Descriptive Statistics for the highest level of academic training and Attitude

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean	
					Lower Bound	Upper Bound
Certificate	26	4.3846	1.76809	.34675	3.6705	5.0988
Bachelor's degree	22	3.9545	1.65406	.35265	3.2212	4.6879
Master's degree	4	4.1250	1.70171	.85086	1.4172	6.8328
Ph.D.	4	3.3750	.85391	.42696	2.0162	4.7338
Other	16	4.3125	2.04837	.51209	3.2210	5.4040
Total	72	4.1667	1.73814	.20484	3.7582	4.5751

Appendix A2: ANOVA for the highest level of academic training and Attitude

ANOVA					
Total attitude					
	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	5.079	4	1.270	.406	.804
Within Groups	209.421	67	3.126		
Total	214.500	71			

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Appendix B2: Descriptive Statistics for the highest level of academic training and Practices

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean	
					Lower Bound	Upper Bound
Certificate	26	2.5000	.91652	.17974	2.1298	2.8702
Bachelor's degree	22	2.7045	.86821	.18510	2.3196	3.0895
Master's degree	4	2.3750	.25000	.12500	1.9772	2.7728
Ph.D.	4	2.5000	.40825	.20412	1.8504	3.1496
Other	16	2.2813	.75208	.18802	1.8805	2.6820
Total	72	2.5069	.82005	.09664	2.3142	2.6996

Appendix C2: ANOVA for the highest level of academic training and Practices

ANOVA					
Total practices					
	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	1.745	4	.436	.635	.639
Within Groups	46.001	67	.687		
Total	47.747	71			

Appendix D2: Descriptive Statistics for Occupation and Knowledge

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean	
					Lower Bound	Upper Bound
Baggage handler	14	12.1032	1.38124	.36915	11.3057	12.9007
Security guard	22	11.5505	1.89230	.40344	10.7115	12.3895
Airline crew	19	11.5088	1.09577	.25139	10.9806	12.0369
Ground agent	9	12.5185	1.51025	.50342	11.3576	13.6794
Aircraft Cleaner	8	12.7778	1.85735	.65667	11.2250	14.3306
Total	72	11.9043	1.59128	.18753	11.5304	12.2783

Appendix E2: ANOVA for Occupation and Knowledge

ANOVA					
Total knowledge					
	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	15.779	4	3.945	1.612	.182
Within Groups	164.006	67	2.448		
Total	179.785	71			

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Appendix F2: Descriptive Statistics for Occupation and Attitude

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean	
					Lower Bound	Upper Bound
Baggage handler	14	5.0357	1.86531	.49853	3.9587	6.1127
Security guard	22	4.2273	1.79103	.38185	3.4332	5.0214
Airline crew	19	3.7632	1.53087	.35121	3.0253	4.5010
Ground agent	9	4.6111	1.78146	.59382	3.2418	5.9805
Aircraft Cleaner	8	2.9375	.97970	.34638	2.1184	3.7566
Total	72	4.1667	1.73814	.20484	3.7582	4.5751

Appendix G2: ANOVA for Occupation and Attitude

ANOVA					
Total attitude					
	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	27.612	4	6.903	2.475	.053
Within Groups	186.888	67	2.789		
Total	214.500	71			

Appendix H2: Multiple Comparisons for Occupation and Attitude

Multiple Comparisons						
Dependent Variable: Total attitude Tukey HSD						
(I) 1.6. Occupation	(J) 1.6. Occupation	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Baggage handler	Security guard	.80844	.57099	.620	-.7923	2.4092
	Airline crew	1.27256	.58826	.206	-.3766	2.9217
	4. Ground agent	.42460	.71356	.975	-1.5758	2.4250
	Aircraft Cleaner	2.09821*	.74021	.046	.0231	4.1734
Security guard	Baggage handler	-.80844	.57099	.620	-2.4092	.7923
	Airline crew	.46411	.52307	.901	-1.0023	1.9305
	4. Ground agent	-.38384	.66085	.977	-2.2365	1.4688
	Aircraft Cleaner	1.28977	.68954	.343	-.6433	3.2229

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Airline crew	Baggage handler	-1.27256	.58826	.206	-2.9217	.3766
	Security guard	-.46411	.52307	.901	-1.9305	1.0023
	4. Ground agent	-.84795	.67582	.719	-2.7426	1.0467
	Aircraft Cleaner	.82566	.70390	.767	-1.1477	2.7990
Ground agent	Baggage handler	-.42460	.71356	.975	-2.4250	1.5758
	Security guard	.38384	.66085	.977	-1.4688	2.2365
	Airline crew	.84795	.67582	.719	-1.0467	2.7426
	Aircraft Cleaner	1.67361	.81154	.249	-.6015	3.9487
Aircraft Cleaner	Baggage handler	-2.09821*	.74021	.046	-4.1734	-.0231
	Security guard	-1.28977	.68954	.343	-3.2229	.6433
	Airline crew	-.82566	.70390	.767	-2.7990	1.1477
	4. Ground agent	-1.67361	.81154	.249	-3.9487	.6015
*. The mean difference is significant at the 0.05 level.						

Appendix I2: Descriptive Statistics for Occupation and Practices

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean	
					Lower Bound	Upper Bound
Baggage handler	14	2.8929	1.52137	.40660	2.0144	3.7713
Security guard	22	2.4545	.50965	.10866	2.2286	2.6805
Airline crew	19	2.3684	.43596	.10002	2.1583	2.5785
4. Ground agent	9	2.5556	.63465	.21155	2.0677	3.0434
Aircraft Cleaner	8	2.2500	.59761	.21129	1.7504	2.7496
Total	72	2.5069	.82005	.09664	2.3142	2.6996

Appendix J2: ANOVA for Occupation and Practices

ANOVA					
Total practices					
	Sum of Squares	**df**	**Mean Square**	**F**	**Sig.**
Between Groups	3.059	4	.765	1.147	.342
Within Groups	44.687	67	.667		
Total	47.747	71			