IOSR Journal of Nursing and Health Science (IOSR-JNHS)
e-ISSN: 2320–1959.p- ISSN: 2320–1940 Volume 10, Issue 3 Ser. III (May – June 2021), PP 35-41
www.iosrjournals.org

Knowledge, Perception And Practices Associated With Prevention Of Blood-Borne Infections Among Students Of Health And Medical Sciences Babcock University, Nigeria.

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Abstract:
Blood borne diseases are diseases that are transmittable from an infectious carrier to a susceptible host. Unfortunately, health care workers and health students are more prone to contracting such diseases as a result of their constant exposure within Hospital work pace. They are many different blood borne pathogens which include syphilis, brucellosis, but the most common blood borne diseases are hepatitis B, hepatitis C and Human Immunodeficiency Virus HIV. The risk of transmission of blood borne infection among health students has become a matter of increasing concern in recent years. Thus this study examined students' knowledge, perception and practices associated with the prevention of blood borne infections in Babcock University.
The research adopted a cross-sectional survey design. The study population were health science students in Babcock university. Four hundred and twenty six students were selected through a non-probability sampling technique. A validated questionnaire with Cronbach's alpha reliability coefficient which ranged from 0.700to 0.943 was used for data collection. The questionnaires were administered through an online survey platform. Statistical Package for Social Sciences (SPSS) version 23 was used to compute descriptive and inferential statistics which were statistically tested at a 95% level.
The results showed that over half of the students were between the ages of 21 and 35 years old with mean±SD 21.83±3.135 years. Majority (376; 95.7%) of the students were not married and 282 (71.8%) were females. Regarding knowledge on blood borne infections, majority of the students (346; 88%) reported that these infections are nosocomial infections. Likewise, 92.6% stated that they knew what blood borne diseases are. The level of knowledge was computed on a 5-point rating scale with 3.85±0.991; 359 (91.3%) students had a high level of knowledge. Perception was graded on a 36-point rating scale with a mean±SD of 24.89±3.848. More than half of the students 56.2% (n = 221) had a high level of perception. The level of blood-borne prevention was moderate with a mean±SD of 9.46±3.082 on a 18-point rating scale. Knowledge had a significant but weak statistical relationship with prevention practices (R^2 = 0.057; p< 0.01); Perception (R^2 = 0.022; p< 0.01) had significant but low influence on the practice of preventive measures towards blood borne infections among health sciences students in Babcock University.
This finding indicates that the improvement of health science students' knowledge on blood borne infection prevention could change their practice, though not with a significant difference. These findings indicate that there are more factors within the health system or psycho-cognitive realm of the students which could effectively promote healthy and high infection-control practices. Future intervention programs should include comprehensive education for students and instructors alike to reduce the risk of occupational exposure to blood borne infections.

Keywords: *Blood-borne infections, Knowledge, Perception, Practices, Prevention, Public Health, Students*

Date of Submission: 06-05-2021 Date of acceptance: 20-05-2021

I. Introduction:

Diseases causes an abnormal health condition state causing distortion in the normal physiology and anatomy of the human body (Clark, 2015). Onset of such disease may be due to various agents such as viruses, bacterial which may be asymptomatic at the early stage of contracting such conditions. An infectious disease is a disease due to a specific infectious agent or its toxic products that arises through transmission of that agent or its products from an infected person, animal, or reservoir to a susceptible host, either directly or indirectly through an intermediate plant or animal host, vector, or the inanimate environment (Porta *et al.*, 2008). Constant exposure to blood borne infections poses a serious risk to health science students as they are in constant contact with disease patients (Sharma, 2017). Transmission of different infections by needle pricks and sharp injuries

have been reported among health science students. Irrespective of improved methods of preventing exposure to blood borne infections, occupational exposure continues to occur (Hayeh and Esena, 2013).

The greatest instrument in reducing the infection risks is knowledge about the contributing factors to these risks, methods for reducing risks and obtaining post- exposure prophylaxis (PEP) when an exposure to infection occurs.

The risk of transmission of blood borne infection among health science students has become a matter of increasing concern in recent years. Health science students undertaking exposure- prone procedures are at risk of contracting blood borne diseases.

For the purpose of this study, exposure prone procedures are considered to be those procedures where there is a risk that injury to health science students may result from exposure to patients' open tissues to the blood of the students. Such procedures may include: Surgical entry into tissues, cavities or organs, or repair of major injuries, child delivery (either vaginal or caesarean deliveries) or other procedures during which sharp instruments are used and bleeding do occur.

The infections that are usually transmitted are viral infections and they include: Hepatitis B, Hepatitis C and Human Immuno-Deficiency Virus (HIV). This research work examines the risk of transmission taking cognizance of the nature, duration and severity of the risk and probability of transmission for each of the identified viruses. It is also set to examine the prevention procedures of these blood borne infections among health science students.

The prevention procedures of the transmission of the blood borne infections under consideration are of utmost importance to this study. In general, Hepatitis B prevention should be based on the screening and adequate vaccination of health science students who are not already immune to the infection. Health science students who are infected with Hepatitis B virus should submit to further testing to clarify their infectivity. The state of the immune system of the health science student must be ascertained and then vaccination performed as appropriate.

Hepatitis C prevention should also be based on the screening of all health science students. Currently there are no vaccines available for hepatitis C or Human immunodeficiency virus (HIV). Prevention of transmission of these viruses depends hugely on good infection control mechanisms or procedures, such procedures are extremely important during laboratory activities that involves exposure to blood and some other body fluids, where students may be at risk of infection due to prolonged and sometimes repeated exposure to situations where transmission is very possible. To prevent constant exposure to blood borne infection during laboratory activities, health science students will have to adhere strictly to the precautionary measures required of the experimental procedures. Bloodborne pathogens are those microorganisms that contains infectious diseases and can be contracted through the blood or body fluid. The infectious disease can be transmitted through needlestick and other sharp injuries, mucous membrane, and skin exposures via exposure to contaminated blood and body fluids (Centers for Disease Control and Prevention, 2017). The human immunodeficiency virus (HIV), hepatitis B virus (HBV), and hepatitis C virus are three of the most common bloodborne pathogens that health care workers (HCWs) are at risk of contracting (HCV) (CDC, 2010).

Infections Health Science Students Are Predisposed To

Human immunodeficiency virus (HIV), hepatitis B virus (HBV) and hepatitis C virus (HCV) are three of the most common blood-borne pathogens from which health care staff are at risk (CDC, 2019). However, bloodborne pathogens are involved in the transmission of more than 20 other pathogens (Beltrami et al., 2000). Co-infection today with several blood-borne pathogens and multidrug-resistant species, including HIV, hepatitis B or C, methicillin-resistant Staphylococcus aureus (MRSA) and co-morbidities associated with diabetes, means that occupational exposure to health care personnel could be at an even higher risk than in previous years (CDC, 2019).

The Centers for Disease Control and Prevention (CDC) reports that hospital-based health care workers suffer 385,000 needlesticks and other sharp-related injuries per year. In other healthcare environments, such as nursing homes, hospitals, emergency medical facilities, and private homes, there are similar incidents. Sharp injuries are mainly associated with occupational hepatitis B virus (HBV), hepatitis C virus (HCV) and human immunodeficiency virus (HIV) transmission, although they have resulted in more than 20 other pathogens being transmitted (CDC, 2015). The greatest risk of infection transmission is via percutaneous exposure to infected blood. The transmission of HBV, HCV, or HIV after exposure to mucous membranes or nonintact skin has also been reported (National Healthcare Safety Network. 2009).

Hepatitis B virus (HBV)

The hepatitis B (HBV) is present worldwide with an estimated 360million carriers with about 10%-20% prevalence in parts of Africa, the Middle and the Far East (Ott, Stevens, Groeger, & Wiersma, 2012;

Lazano, et al., 2010), of whom 312000 die annually of advanced cirrhosis and 341000 of liver cancer (Lavanchy, 2004).

The complete infective virion or Dane particle is a 42nm particle comprising an inner core of nucleocapsid surrounded by an outer envelope of surface protein (HBsAg). This surface coat is produced in excess by the infected hepatocytes which can exist separately from the whole virion in serum and body fluid as a 22nm particle. Hepatics contains a major "a" antigen determinant as well as several subtypes such as (d, y, w and r) and combination of these subdeterminants are used to classify HBV genotypes. According to literature, Ten HBV genotypes have been described to date, ranging from A to J, based on at least 8% genetic diversity in the viral genome (Lin & Kao, 2015; Sagnelli, et al., 2015). Genotypes of HBV indicate a peculiar geographical distribution (Previsani & Lavanchy, 2002). Genotype A predominates in Northern Europe and North America, genotypes B and C in Central Asia, genotype D in Mediterranean countries, genotype E in sub-Saharan Africa and Madagascar, genotype F in South and Central America, genotypes G and H in Mexico and some Central American countries (Roman, Panduro, 2013; Panduro, Maldonado-Gonzalez, Fierro, & Roman, 2013) and genotypes I and J in East America (Roman, Panduro, 2013; Kao, 2007). The age at the time of infection activates the progression to chronicity of HBV infection, which occurs in about 90% of babies born with hepatitis B e antigen (HBeAg)-positive mothers, a prevalence that gradually decreases in the adult population with a rise in age of up to 2%-5% (Wasley, Grytdal, & Gallagher, 2008).

The research hypothesis for this study includes:

H_{01}: There is no significant association between the level of knowledge of the health science students and the prevention practices of blood borne infection. \

H_o2: There is no significant association between the health science students' perception of blood borne infection and preventive practices of blood borne infection among the health science students.

II. Methodology:

Research Design

The study adopted cross-sectional design for this research as it is suitable for use of the study. The study employed both quantitative method of data collection whereas the assessment was through online (google forms) survey. A cross sectional study design involves collection of data from many different individuals at a single point in time as it examines the relationship between health related conditions or disease and other variables of interest.

Research Setting:

As a result of the corona virus causing difficulty in movements and current closure of most other higher institutions of higher learning in our nation Nigeria, this research will be restricted within Babcock University only. The university was founded in 1999 and commenced with three faculties (which later became Schools)—Faculty of Education and Humanities, Faculty of Management and Social Sciences, and Faculty of Science and Technology with eleven departments and commenced her medical school in the year 2010. More recently, the college of health sciences was created comprising of department of public health, department of medical laboratory science and department of nursing science.

Population:

The population for this study includes students of health science in Babcock University (Medicine, Medical laboratory Science and Nursing).

Inclusion Criteria:

Participants eligible for this study are consenting third year students to final year students of health sciences, Babcock University.

Exclusion criteria:

Participants excluded from this study are first year and second year students of health sciences (non-clinical years students), Babcock University.

Sample Size and Sampling Technique

The sample size for the study was determined by the application of the Cochran (1997) formula as the standard method of randomization and identifying the limits of errors. Data will be collected from undergraduate health science students (nursing, medical laboratory, public health). The use of non-probability sampling technique will be used (Purposive Technique) to carry out this survey. The formula will be used because the study population is 2,000 and it gives more precise estimates of population parameters and their differences and gives more powerful statistical test.

Information about Instrument Used for the Study

The research instrument comprise three-four segments which includes demography (sex, age, and other basic information), perception level of respondent on subject matter, knowledge level of respondent on subject matter and Attitude/practices of respondent with respect to subject matter. The research instrument will involve close ended questions (yes/no) and 5 variance of Likertscale questions (strongly agree, agree, neutral, disagree, and strongly disagree).

Validity of Research Instrument:

Content Validity:

The content of the research instrument were strengthened through incorporating items plus variable identified from review of literature related to title. Feedbacks provided after the pilot stud by respondents were included and corrections made were effected.

Reliability of Instrument Standardization Procedures

The reliability of the questionnaire determined from the pre-test using alpha Cronbach test which reports a reliability co-efficient of 0.80. This requires less than 10% of initial sample size which is done in order to discover the consistency level of the respondent's remarks.

Collection for Study

The data was administered through online platforms (google forms) through the existing online platforms created by the University such as google classroom and which was systematically analyzed.

Ethical Consideration

Ethical clearance was obtained from Babcock University Health Research Committee (BUHREC) (consent form will be administer via online platform to the respondents (students) before giving out the research instrument)

Data Analysis Procedure

After all interviews, information obtained from respondents was collected and analyzed using SPSS 23.0 statistical data analysis tool and reasonable inferences was deducted. The descriptive statistics such as frequency counts, percentage, mean and standard deviation was calculated to explain and describe the demographic information while inferential statistics was used to analyze the research questions in the study.

III. Results:

Research Hypothesis 1:

H_o1: There is no significant association between the level of knowledge of the health science students and the prevention practices of blood borne infection.

Table 1: Relationship between Knowledge and Practice

Variables	N	df	r	r^2	p
Knowledge/Practice	393	392	0.238	0.057	0.000*

The relationship between the level of knowledge of students and their practice of blood-borne infection transmission prevention procedures was examined using the Pearson Correlation Test. Results showed that there was a significant relationship between the level of knowledge and practice (r = 0.238; *p* = 0.000). A regression analysis was further conducted and the results showed that knowledge of the students on blood-borne infections contributed to only 5.7% of the variations observed in the practice (r2 = 0.057). The null hypothesis is rejected; knowledge had a statistically significant relationship with prevention practices .

Research Hypothesis 2:

H_o2: There is no significant association between the health science students' perception of blood borne infection and preventive practices of blood borne infection among the health science students.

Table 2:Relationship between Perception and Practice

Variables	N	df	r	r2	p
Perception/Practice	393	392	0.149	0.022	0.003*

A Pearson Correlation test was conducted to determine the relationship between the perception of health sciences students and their practice of preventive measures. The results showed that there was a statistically significant relationship between the variables (r = 0.149; *p* = 0.003). Further regression analysis showed that perception contributed to only 2.2% (r^2 = 0.022) of the changes observed in the students' preventive practices .

IV. Discussion

Exposure to infectious diseases and specifically blood-borne infections is an occupational hazard that health science students face. As bloodborne microorganisms like HIV, hepatitis B, and hepatitis C become more prevalent, medical care experts become more in danger to bloodborne microbe exposure. The knowledge about prevention of such infections is essential, hence, this study was conducted to examine the level of knowledge, perception and practices of preventive measures among students in the health and allied health faculties. The mean age of the students is similar to ages of health sciences students reported in different studies (Oyetola, Oyewole, Adedigba, Aregbesola, Umezudike, Adewale, 2016; Sabu, Remya, Binu & Vivek, 2011). The gender distribution is similar to samples of similar age groups in different studies across the country. Students undergoing training may be exposed to infections, hence, this study recruited students who had started clinical postings at the various departments.

It is encouraging to observe that most of the students knew that blood-borne infections are nosocomial infections. Such infections are referred to as health-care associated infections because they are hospital-acquired. Health care workers and students are vulnerable to such infections because of the patient care process in which they are involved. While healthcare workers are vulnerable, it is noteworthy that patients are also susceptible to such infections. Similar to the knowledge of students on what blood-borne infections are is their knowledge of the components of blood-borne infection prevention. Over half of the students reported that the use of barriers such as gloves, masks, caps is effective. A study by Sofola, Folayan, Denloye & Okeigbeben (2007) reported awareness of face wears but limited use. This finding suggests that students were aware of the modes of prevention of infections, not only for blood-borne but also for other routes of infections. The knowledge could have been from their training as prospective health workers as majority reported to know the practices and about three-quarters had taken trainings on prevention of blood-borne infections.

Hepatitis B virus (HBV) vaccination coverage was 78.8% among the students who completed the data collection instrument. This is result is evidence of the preventive measures that students and healthcare workers adopt to protect themselves against facility-based infections. However, among the vaccinated group, only 56.6% had completed all three (3) doses. The finding of this study is slightly better than findings of a study conducted by Wang, Fennie, He, Burgess & Williams (2003) in which 69% of the students reported HBV vaccination. Another study by Mesfin & Kibret (2013) reported only 13.4% of vaccine coverage among medical students. The scientific knowledge about HBV transmission and severity is vital for health sciences in order for them to take proper protection during their clinical posting. Hepatitis B virus is one of the infections that is easy to transmit and its transmission rate is higher than that of human immunodeficiency virus (HIV).

The students' knowledge on the components of prevention of blood-borne infection was moderate as only 58% of the students stated that the use of barriers is more important than the other forms such as environmental control or care with devices or equipment. The level of knowledge of health sciences students on the transmission and prevention of blood-borne infections showed that majority of the students had a high level of knowledge though there may still be some gaps in knowledge regarding some aspects of blood-borne infections which can be filled in through trainings and education modules. Adherence to standard precautions, using personal protective equipment (PPE) and provision of appropriate safety tools can be strategies for risk reduction towards transmission of blood-borne infections. Health sciences students are still at risk of transmission because they are still in training and may not have much experience regarding invasive procedures hence, their safety should be prioritized.

The proportion of students who perceived themselves to be at risk of contracting blood-borne infections was high. This finding creates a high-risk alert in the students as they engage with samples and patients during their training. The high level of perceived susceptibility will influence the students' preventive measures especially when they are within the health facility settings. The students were aware of the risk of transmitting infections to their family members and friends and this high perception should encourage the students to practice standard precautions such handwashing before the facilities. About half of the students acknowledged that their immune systems are stronger than bloodborne infections. They perceived themselves to be at risk of death if they contract any bloodborne infection. The students' perception about their occupational hazard is quite high. Despite the fears and knowledge of the risks involved with bloodborne infections, some of the students reported that they would be embarrassed to see a doctor if they contract any bloodborne infection.

The proportion of students who reported to always wear gloves in other to prevent contracting bloodborne infection was high but not as high as expected. There were still about a quarter of the students who reported to rarely or never wore gloves. This may have been a result of observations from their senior colleagues or instructors. Students' behavior may have been influenced by the behaviors of their clinical instructors who had not been consistent with use of protective gears. In a study conducted in China by Wang, Fennie, He, Burgess & Williams (2003), it was reported that reasons for non-compliance could also be the influence from their clinical instructors. Obstacles to use of gloves could be addressed with proper education of health sciences students and instructors.

The assessment of the practice level showed that almost half of the students did not use sterilized needles. About a quarter of the students maintained good dietary patterns to boost their immunity against infections. Likewise, a quarter of the students stated that they never wore gloves during invasive procedures in order to prevent contracting blood borne infection. The overall level of practice of the students was average with a mean of 9.46 points on an 18-points rating scale. Considering the exposure of these health science students to blood borne infections, the practice of preventive behaviors among the students in this study was low. Though the majority of the students have a high level of knowledge, this did not reflect in their practice. Over half of the students in this study reported to wash their hands between every patient contact and they acknowledged that by so doing, they reduced their risk of susceptibility. Knowing these precautions did not translate to proper practice considering the low level of practice reported by the students. This can be reiterated by reports by Wu, Yin, Song, Chen, Wu & Zhao, (2015) who stated that knowledge of students may influence attitudes and behaviors but infection control programs and exposure-control may be more effective.

While majority of the students were worried about getting a blood borne infection from exposure at work, the reasons for not practicing preventive measures leaves a lot to imagination. The findings regarding the worry of the students are similar to that reported by Patterson, Novak, Mackinnon & Ellis (2003). The reason with the highest responses for poor adherence to standard procedures was that the facilities were not sufficient. Followed by that was that the students' lack of awareness. This finding indicates that though the students had taken trainings, they still felt they lacked some basic information. This information could have been passed to them by their superiors or instructors.

V. Conclusion: and Recommendation:

The findings of this study highlight the relationship between the knowledge of the health sciences students and their practice of preventive behaviors. This finding indicates that the improvement of health science students' knowledge on blood borne infection prevention could change their practice, though not with a significant difference. These findings indicate that there are more factors within the health system or psycho-cognitive realm of the students which could effectively promote healthy and high infection-control practices.

This study therefore recommends that:

1. Future intervention programs should include comprehensive education for students and instructors alike to reduce the risk of occupational exposure to blood borne infections.
2. There is a need to strengthen training modules of students in health sciences or allied courses regarding infection prevention practices. Such trainings should be independent courses in their curricular to reduce overall mortality and morbidity due to blood borne infections such as HBV, HIV in both patients and healthcare workers.

References:

[1]. Clark A. (2015) 'Health Care Workers Adherence to Infection Prevention Practices and Control Measures: A Case of a Level Four District Hospital in Kenya', American Journal of Nursing Science, 4(2), p. 39. doi: 10.11648/j.ajns.20150402.13.

[2]. CDC (2010) 'Guidelines for Prevention of Transmission of Human Immunodeficiency Virus and Hepatitis B Virus to Health-Care and Public-Safety Workers A Response to P.L. 100-607 The Health Omnibus Programs Extension Act of 1988'.

[3]. Centers for Disease Control and Prevention (CDC). (2010). Sticks campaign. Last updated September 28, 2010.

[4]. Centers for Disease Control and Prevention (CDC). (2017). Bloodborne infectious diseases: HIV/AIDS, hepatitis B, hepatitis C. Last updated April 5, 2017.

[5]. Centre for Disease Control and Prevention. 2009. The National Health Care Safety Network Manual. From: www.cdc.gov/nhsn/PDFs/HSPmanual/HPS_Manual.pdf:

[6]. FitzSimons D, Francois G, De Carli G (2008). Hepatitis B virus, hepatitis C virus and other blood-borne infections in healthcare workers: guidelines for prevention and management in industrialised countries. Occup Environ Med; 65: 446–51.

[7]. Kao JH (2007). Role of viral factors in the natural course and therapy of chronic hepatitis B. Hepatol Int;1:415–430.

[8]. Lavanchy D (2004). Hepatitis B virus epidemiology, disease burden, treatment, and current and emerging prevention and control measures. J Viral Hepat. ;11:97–107.

[9]. Lin CL, Kao JH (2015). Hepatitis B virus genotypes and variants. Cold Spring Harb Perspect Med;5:a021436.

[10]. Mesfin YM, Kibret KT (2013) Assessment of Knowledge and Practice towards Hepatitis B among Medical and Health Science Students in Haramaya University, Ethiopia. PLOS ONE 8(11): e79642

[11]. NHSN Healthcare Personnel Safety Component Manual 2009. http://www.cdc.gov/nhsn/forms/HealthcareSafetyforms.html#bbf.

[12]. Ott JJ, Stevens GA, Groeger J, Wiersma ST (2012). Global epidemiology of hepatitis B virus infection: new estimates of age-specific HBsAg seroprevalence and endemicity. Vaccine. ;30:2212–2219.

[13]. Oyetola EO, Oyewole T, Adedigba M, Aregbesola ST, Umezudike K, Adewale A. Knowledge and awareness of medical doctors, medical students and nurses about dentistry in Nigeria. Pan Afr Med J. 2016 Apr 7;23:172. doi: 10.11604/pamj.2016.23.172.7696. PMID: 27303588; PMCID: PMC4894672.

[14]. Panduro A, Maldonado-Gonzalez M, Fierro NA, Roman S (2013). Distribution of HBV genotypes F and H in Mexico and Central America. Antivir Ther. ;18:475–484.

[15]. Panlilio, AL, Cardo, DM, Grohskopf, LA, Heneine, W & Ross, CS. 2005. Updated US Public Health Service Guidelines for the Management of Occupational Exposures to HIV and recommendations for post-exposure prophylaxis. Morbidity Mortality Weekly Report 54:1−17

[16]. Patterson, J. M. M., Novak, C. B., Mackinnon, S. E., & Ellis, R. A. (2003). *Needlestick injuries among medical students. American Journal of Infection Control, 31(4), 226–230.* doi:10.1067/mic.2003.44
[17]. Previsani N, Lavanchy D. Hepatitis B. World Health Organisation-Department of Communicable Diseases Surveillance and Response. Geneva: 2002. Available from: http://www.who.int/csr/disease/hepatitis/HepatitisB_whocdscsrlyo2002_2.pdf. [Google Scholar
[18]. Sharm, E. M. A. S., El-shazly, H. M. A. and Dewidar, A. A. M. S. (2017) 'Infection control awareness among healthcare providers in family health settings in Shebin El-kom district , Menoufia', Menoufia Medical Journal, (27), pp. 840–846. doi: 10.4103/1110-2098.149804
[19]. Sofola OO, Folayan MO, Denloye OO, Okeigbeben SA. Occupational exposure to bloodborne pathogens and management of exposure incidents in Nigerian dental schools. J Dent Educ 2007: 71: 832–837.
[20]. Wasley A, Grytdal S, Gallagher K (2006). Surveillance for acute viral hepatitis--United States,. MMWR Surveill Summ. 2008;57:1–24.

OBAOYE, AFOLUWAJUWONLO G, et. al. "Knowledge, Perception And Practices Associated With Prevention Of Blood-Borne Infections Among Students Of Health And Medical Sciences Babcock University, Nigeria." *IOSR Journal of Nursing and Health Science (IOSR-JNHS)*, 10(3), 2021, pp. 35-41.