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Evaluate the Effectiveness of Awareness Training Programme in Handling Personal Protective Equipments to Prevent Corona Infection among Staff Nurses at General Hospital Alnamas

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Abstract: ***The COVID-19 virus spreads primarily through droplets of saliva or discharge from the nose when an infected person coughs or sneezes, so it's important that you also practice respiratory etiquette (for example, by coughing into a flexed elbow). Nurses must receive training on and demonstrate an understanding of: when to use PPE, what PPE is necessary, how to properly don, use, and doff PPE in a manner to prevent self- contamination?, how to properly dispose of or disinfect and maintain PPE? and the limitations of PPE. So, it was important to create awareness and training among nurses working inside the Kingdom to safeguard themselves and their patient., therefore we the faculty of Applied Medical Science College For Females At Alnamas, University Of Bisha selected this study to Evaluate The Effectiveness Of Awareness Training Programme In Handling Personal Protective Equipments To Prevent Corona Infection Among Staff Nurses At General Hospital Alnamas. The study was conducted among 80 staff nurses working at General Hospital in Alnamas. The tool used for the research study was demographic data , awareness training programme , semi structured awareness scale and knowledge questionnaire to evaluate the effectiveness of awareness training programme in handling personal protective equipments to prevent corona infection. Before conducting the study, formal permission was obtained. Informed consent was obtained from the participants. The period of data collection was done for 4 weeks. The researcher introduced self to each subject and explained the purpose of the study and assessed the awareness level before conducting awareness training programme in creating awareness on handling personnel protective equipment to prevent (Covid -19) corona infection. After finishing awareness training programme again the awareness level were assessed. Data analysis was done according to the objectives of the study using descriptive statistics and inferential statistics. Frequency percentage mean and standard deviation were used for the analysis. Study findings reveals that the awareness training programme in handling personnel protective equipment to prevent (Covid -19) corona infection is effective and which was evidenced by the gain in post test awareness score was significant at 0.05 level of significant and the value of t is 21.521598 and the value of p is < .00001. The result is significant at p < .05..Findings revealed that awareness training programme in creating awareness about handling personnel protective equipment to prevent (Covid -19) corona infection among staff nurses was an effective teaching strategy in gaining awareness among the staff nurse. The findings also revealed that there was significant association between awareness level and education of the participant, area of posting, received any information before regarding PPE and information regarding handling personnel protective equipment to prevent (Covid -19) corona infection in their working environment. But there is no association between awareness level and age, citizenship, family income per –month.***

Keywords: ***Evaluate, effectiveness, awareness, training programme, personal protective equipments, staff nurses***

I. INTRODUCTION

"Protect Yourself And Save Others From Corona Infections."

Prevention is better than cure. Protect ourselves and protect our community from COVID-19, Corona virus disease (COVID-19) is an infectious disease caused by a newly discovered corona virus, which is a respiratory illness that has infected more than 3 million people and killed over 250,000 and the illness has turned into a global pandemic with massive ramifications. It brings worldwide health crisis and affects the daily living of the people. Most people infected with the COVID-19 virus will experience mild to moderate respiratory illness and recover without requiring special treatment. From 1 January through 31 January 2019, the International Health Regulations (IHR) National Focal Point of Saudi Arabia reported fourteen additional cases of Middle East

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respiratory syndrome corona virus (MERS-CoV) infection, including three deaths. Details of these cases can be found by following the link to a separate document after this paragraph. Of the 14 cases reported in January, eight are from three separate clusters of cases. Cluster 1 involves three cases (listed as cases 1, 2 and 3) in Riyadh Province and cluster 2 involves two cases (listed as cases 4 and 5) in the city of Jeddah. Cluster 3 involves three cases (listed as cases 11, 13 and 14) in the city of Wadi Aldwaser and is currently ongoing. Older people, and those with underlying medical problems like cardiovascular disease, diabetes, chronic respiratory disease, and cancer are more likely to develop serious illness.

The best way to prevent and slow down transmission is be well informed about the COVID-19 virus, the disease it causes and how it spreads. Protect yourself and others from infection by washing your hands or using an alcohol based rub frequently and not touching your face.

The COVID-19 virus spreads primarily through droplets of saliva or discharge from the nose when an infected person coughs or sneezes, so it's important that you also practice respiratory etiquette (for example, by coughing into a flexed elbow). Current data suggest person-to-person transmission most commonly happens during close exposure to a person infected with the virus that causes COVID-19, primarily via respiratory droplets produced when the infected person speaks, coughs, or sneezes. Droplets can land in the mouths, noses, or eyes of people who are nearby or possibly be inhaled into the lungs of those within close proximity. Transmission also might occur through contact with contaminated surfaces followed by self-delivery to the eyes, nose, or mouth.

Healthcare Personnel (HCP) include, but are not limited to, emergency medical service personnel, nurses, nursing assistants, physicians, technicians, therapists, phlebotomists, pharmacists, students and trainees, contractual staff not employed by the healthcare facility, and persons not directly involved in patient care, but who could be exposed to infectious agents that can be transmitted in the healthcare setting (e.g., clerical, dietary, environmental services, laundry, security, engineering and facilities management, administrative, billing, and volunteer personnel). Patients and visitors should, ideally, be wearing their own cloth face covering upon arrival to the facility. If not, they should be offered a facemask or cloth face covering as supplies allow, which should be worn while they are in the facility (if tolerated). They should also be instructed that if they must touch or adjust their cloth face covering they should perform hand hygiene immediately before and after. Facemasks and cloth face coverings should not be placed on young children under age 2, anyone who has trouble breathing, or anyone who is unconscious, incapacitated or otherwise unable to remove the mask without assistance. Patients may remove their cloth face covering when in their rooms but should put them back on when leaving their room or when others (e.g., HCP, visitors) enter the room. Screening for symptoms and appropriate triage, evaluation, and isolation of individuals who report symptoms should still occurs

A. Need For The Study

Corona virus cases have been detected in a number of regions across the Kingdom Of Saudi Arabia. The Ministry of Health applies the recommendations put forth by competent international organizations, such as WHO, in examining those in contact with patients. Patients, those in contact with them, as well as health practitioners dealing with patients are examined under certain criteria. The Ministry of Health has regional laboratories throughout the Kingdom's regions, in addition to integrated laboratories at all hospitals across the nation.

With regard to the current referential laboratory, as is globally followed, in case of detecting new diseases, lab tests are focused in one referential laboratory at the national level; in order to ensure the accumulation of experiences among workers and to prevent the occurrence of any inaccurate results, compiling to what is globally followed. Jeddah Governorate has been selected as the national headquarter; because of its vicinity to the Two Holy Mosques, knowing that the equipment and capabilities of this type of laboratories are available, and they are to be added when necessary.

As part of source control efforts, nurses should wear a facemask at all times while they are in the healthcare facility. When available, facemasks are generally preferred over cloth face coverings for nurses as facemasks offer both source control and protection for the wearer against exposure to splashes and sprays of infectious material from others. If there are anticipated shortages of facemasks, facemasks should be prioritized for nurses and then for patients with symptoms of COVID-19 (as supply allows). Cloth face coverings should NOT be worn instead of a respirator or facemask if more than source control is required.

Nurses might wear their cloth face covering for part of the day when not engaged in direct patient care activities, only switching to a respirator or facemask when PPE is required. To avoid risking self-contamination, nurses should consider continuing to wear their respirator or facemask (extended use) instead of intermittently switching back to their cloth face covering. Of note, N95s with an exhaust valve might not provide source control. Nurses should remove their respirator or facemask and put on their cloth face covering when leaving the facility at the end of their shift.

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They should also be instructed that if they must touch or adjust their facemask or cloth face covering they should perform hand hygiene immediately before and after.

Nurses should have received job-specific training on PPE and demonstrated competency with selection and proper use (e.g., putting on and removing without self-contamination).Because cloth face coverings can become saturated with respiratory secretions, care should be taken to prevent self-contamination. They should be changed if they become soiled, damp, or hard to breathe through, laundered regularly (e.g., daily and when soiled), and, hand hygiene should be performed immediately before and after any contact with the cloth face covering. Facilities should also provide training about when, how, and where cloth face coverings can be used (e.g., frequency of laundering, guidance on when to replace, circumstances when they can be worn in the facility, importance of hand hygiene to prevent contamination). Nurses must receive training on and demonstrate an understanding of: when to use PPE, what PPE is necessary, how to properly don, use, and doff PPE in a manner to prevent self-contamination?, how to properly dispose of or disinfect and maintain PPE? and the limitations of PPE. So, it was important to create awareness and training among nurses working inside the Kingdom to safeguard themselves and their patient., therefore we the faculty of Applied Medical Science College For Females At Alnamas, University Of Bisha selected this study to Evaluate The Effectiveness Of Awareness Training Programme In Handling Personal Protective Equipments To Prevent Corona Infection Among Staff Nurses At General Hospital Alnamas

B. Statement Of The Problem

Evaluate The Effectiveness Of Awareness Training Programme In Handling Personal Protective Equipments To Prevent Corona Infection Among Staff Nurses At General Hospital Alnamas

C. Aim Of The Study

To Evaluate The Effectiveness Of Awareness Training Programme In Handling Personal Protective Equipments To Prevent Corona Infection Among Staff Nurses At General Hospital Alnamas

D. Objectives Of The Study

1) To assess the pre-test awareness level among staff nurses before administering video assisted awareness training programme in handling personal protective equipments to prevent corona infections.
2) To assess the post-test awareness level among staff nurses before administering video assisted awareness training programme in handling personal protective equipments to prevent corona infections.
3) To evaluate the effectiveness of awareness training programme in handling personal protective equipments to prevent corona infection among staff nurses.
4) To find out the association between awareness level with their selected demographic variables.

E. Operational Definition

1) *Evaluate:* Evaluate refers to determination of the awareness level
2) *Awareness Training Program:* The more intensive learning process and methods to deal with a situation and make the nurses to know about personal protective equipments through observation.
3) *Personal Protective Equipments:* Personal protective equipment, commonly referred to as "PPE" and is equipment worn by nurses to minimize exposure to hazards that cause serious workplace injuries and illnesses. These injuries and illnesses may result from contact with chemical, radiological, physical, electrical, mechanical, or other workplace hazards.

F. Hypothesis

1) *Research Hypotheses:* The following research hypotheses were formulated to achieve the aim of the current study: H1 - There will be a statistical significant difference in awareness level before and after training programme in creating awareness in handling personal protective equipments to prevent corona infection among staff nurses. H 2- There will be a significant association between the awareness level of study subjects with their selected demographic variables

G. Assumption

Awareness training program in creating awareness creating awareness in handling personal protective equipments to prevent corona infection among staff nurses might have direct effect in prevention of corona virus infection in hospital setting

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H. Delimitation

The data collection is delimited to 4 weeks Staff nurses who are willing to participate during data collection

I. Limitation

The study was conducted among staff nurses working at General Hospital in Alnamas, Kingdom of Saudi Arabia, generalization can be done but with caution

J. Projected Outcome

The study finding helps to get aware after training programme in handling personal protective equipments to prevent corona infection

II. METHODOLOGY

This chapter includes research design, the setting of the study, the sample size, the criteria for sample selection, the methods of sample selection the instruments and tools for data collection, the technique of data analysis and protection of human subjects. The present study was designed to evaluate the effectiveness of awareness training programme in handling personal protective equipments to prevent corona infection among staff nurses at general hospital Alnamas

A. Research Approach

The research approach used for this study was quantitative approach.

B. Research Design

The research design selected for the present study was quasi experimental one group pre-test post- test design. The Investigator had conducted awareness training programme to create awareness, semi structured awareness scale and knowledge questionnaire to evaluate the effectiveness of awareness training programme in handling personal protective equipments to prevent corona infection among staff nurses at general hospital Alnamas. The research design adopted for the study is diagrammed as:

2) KEY

O1 = It is the first observation means assessment of pre-test score of awareness level & Demographic data among staff nurses at General Hospital in Alnamas.

X = Treatment to the group is the administration of awareness training programme in creating awareness in handling personal protective equipments to prevent corona infection

O2 = It is the second observation means assessment of post-test score of awareness level & Demographic data among staff nurses at General Hospital in Alnamas.

C. Setting Of The Study

The study was conducted at General hospital , Alnamas, Kingdom of Saudi Arabia. 80 staff nurses were selected as samples for this study. This setting was selected because of the availability of participants and feasibility of conducting the study. Researcher's convenience and familiarity with settings were added reason.

D. Population

The target population for this study is staff nurses at General hospital in Alnamas, Kingdom of Saudi Arabia.

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E. Sample

Sample consisted of 80 staff nurses who were working in General hospital Alnamas, Kingdom of Saudi Arabia.

F. Sampling Technique

80 staff nurses who were working in General hospital Alnamas, Kingdom of Saudi Arabia. were selected by convenient sampling method

G. Criteria For Sample Selection

1) *Inclusion Criteria:* The staff nurses who are willing to participate in the study.
2) *Exclusion Criteria:* The staff nurses who are having busy schedule and not able to participate in awareness training programme.

H. Research Tool And Technique

The tool used for the research study was demographic data , awareness training programme , semi structured awareness scale and knowledge questionnaire to evaluate the effectiveness of awareness training programme in handling personal protective equipments to prevent corona infection .

I. Description Of The Tool

The tool used for the study includes two section that is section I , II and section III.

1) *Section* I: It had items related to demographic data consists of age in years, citizenship, education, area of posting, family income , received any information before regarding PPE, handling personnel protective equipment to prevent (Covid -19) corona infection in their working environment
2) *Section II:* Questionnaire to assess the awareness and knowledge handling personnel protective equipment to prevent (Covid -19) corona infection in their working environment .It consist of 25 statement related to awareness and knowledge in handling personnel protective equipment to prevent (Covid -19) corona infection in their working environment.

a) *Scoring Procedure:* The items were multiple choice type in both awareness and knowledge questionnaire. Each questionnaire carries total score 25. Each correct response carry one score and incorrect response carry zero score Awareness & Knowledge in handling personnel protective equipment to prevent (Covid -19) corona infection Questionnaire

Between (20-25 Score) 80 and 100% - Aware

Between (10- 19Score) 40 and 78% - Moderately Aware Below (0-9Score) 36 %- Not at all aware

3) *Section III:* A wareness training programme on handling personnel protective equipment to prevent (Covid -19) corona infection.

J. Data Collection Procedure

Before conducting the study, formal permission was obtained. Informed consent was obtained from the participants. The period of data collection was done for 4 weeks. The researcher introduced self to each subject and explained the purpose of the study and assessed the awareness level before conducting awareness training programme in creating awareness on handling personnel protective equipment to prevent (Covid -19) corona infection. . After finishing awareness training programme again the awareness level were assessed.

K. Plan For Data Analysis

Data analysis was done according to the objectives of the study using descriptive statistics and inferential statistics.

L. Descriptive Statistics

Frequency percentage mean and standard deviation were used for the analysis.

M. Inferential Statistics

Paired “T” test was used for testing effectiveness of awareness training programme in creating awareness on handling personnel protective equipment to prevent (Covid -19) corona infection. Chi – square was used to determine the association between demographic variables with awareness level.

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N. Protection Of Human Subjects

After the problem statement was approved formal permission was obtained before starting the study. The oral & written consent was obtained from each participants of the study before starting the data collection. Assurance was given to the subject that the anonymity of each individual would be obtained.

III. RESULTS& DISCUSSION

This section shows the result findings of the study which is based on data analysis and interpretation of data collected from the participants. The data collected during the present study were analysed based on the objectives formulated for the study.

A. Organization Of The Findings

In order to find out the relationship between the variables and also to be assess the awareness value the data gathered were tabulated, analysed and interpreted using both descriptive and inferential statistics. The data are presented under the following headings.

1) Frequency and percentage distribution of sample characteristics of the study.
2) Findings related to frequency and distribution of awareness level of the participants.
3) Association between knowledge level and demographic variables such as age in years, citizenship, education, area of posting, family income , received any information before regarding PPE and information regarding handling personnel protective equipment to prevent (Covid -19) corona infection in their working environment.

Frequency and percentage of sample characteristics of the study

Table .1.Distribution of frequency and percentage of demographic variables (N=80)

Demographic factor	Category	% Of Sample
Age	20-30years	42.5
	31-40years	40
	41-50years	11.25
	51-60years	6.25
Citizenship	Saudi	46.25
	Non Saudi	53.75
Education	GNM	11.25
	B.Sc. Nursing	86.25
	M.sc. Nursing	2.5
Area of posting	Ward	52.5
	OPD	16.25
	ICU	11.25
	Emergency Room(ER)	20
Family income per –month	Less than 5000SR	10
	5001SR-6000SR	27.5
	6001SR-7000SR	13.75
	7001SRand above	48.75
Have you received any information before regarding PPE?	Yes	90
	No	10
Do you handle personnel protective equipment to prevent (Covid -19) corona infection in your working environment?	Yes	8.75
	No	91.25

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Table .2.Frequency and percentage of distribution of pre-test awareness level (N=80)

Awareness level	Frequency	Percentage
Aware	4	5%
Moderately aware	32	40%
Not at all aware	44	55%

Table .3.Frequency and percentage of distribution of post-test awareness level (N=80)

Awareness level	Frequency	Percentage
Aware	74	92.5%
Moderately aware	04	5%
Not at all aware	02	2.5%

The data from the above table 2 & 3 shows that scoring difference between pre-test and post- test. It shows that in pre-test among all staff nurses majority of 44(55%) not at all aware, 32(40%) were moderately aware and 4 (55%) were aware about handling personnel protective equipment to prevent (Covid -19) corona infection. In the post-test there was marked improvement in the awareness level of adolescent girls. In post-test scored 02(2.5%) not at all aware, 04(5%) scored moderately aware and 74 (92.5%) were aware about handling personnel protective equipment to prevent (Covid -19) corona infection.

The awareness training programme in handling personnel protective equipment to prevent (Covid -19) corona infection is effective and which was evidenced by the gain in post test awareness score was significant at 0.05 level of significant and the value of *t* is 21.521598 and the value of *p* is < .00001. The result is significant at p < .05..Findings revealed that awareness training programme in creating awareness about handling personnel protective equipment to prevent (Covid -19) corona infection among staff nurses was an effective teaching strategy in gaining awareness among the staff nurse.

The findings also revealed that there was significant association between awareness level and education of the participant, area of posting, received any information before regarding PPE and information regarding handling personnel protective equipment to prevent (Covid -19) corona infection in their working environment. But there is no association between awareness level and age, citizenship,, family income per –month.

IV. CONCLUSIONS

Staff nurses should adhere to standard and transmission-based precautions when caring for patients with Covid-19 infection. Personal protective equipment (PPE) is used every day by staff nurses and all other healthcare personnel (HCP) to protect themselves, patients, and others when providing care. Personal protective equipment helps to protect staff nurses from potentially infectious patients and materials, toxic medications, and other potentially dangerous substances used in healthcare delivery especially in hospital environment. We should provide adequate training for staff nurses in handling personal protective equipments to protect themselves and their customers and the whole community from this Covid-19 pandemic.

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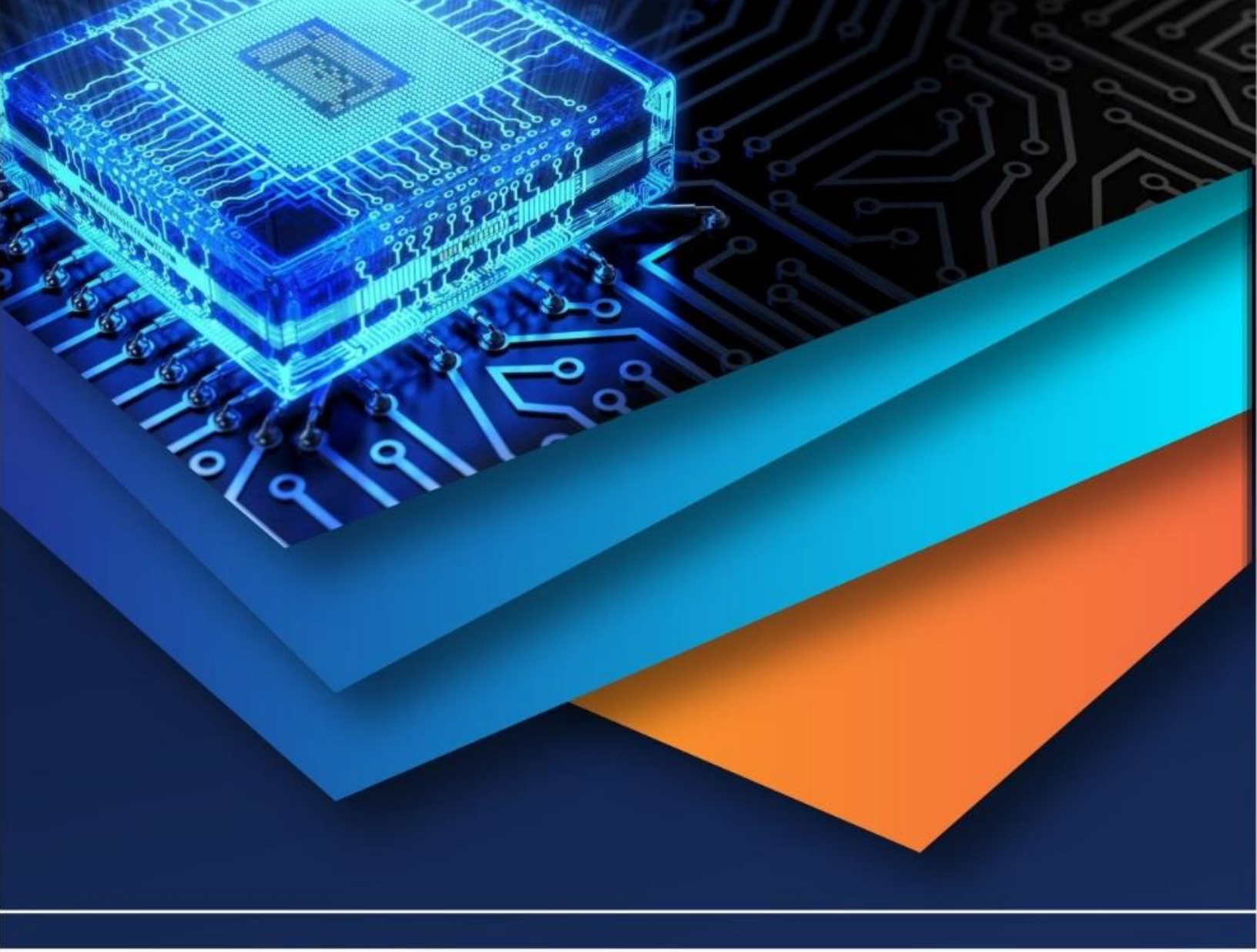

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