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A Quasi-Experimental Study on the Effectiveness of Structured Teaching Program on Knowledge Regarding Mosquito Control Measures among High School Children in Selected Rural Area in Vizanagaram District

Krishna Vaishnavi P[1]
[1]*Professor, Gitam Institute of Nursing, Gitam, Visakhapatnam, Andhra Pradesh*

Abstract: ***The purpose of the study was to find out the pre and post-test levels of knowledge regarding mosquito control measures among high school children at Vizianagaram district in Andhra Pradesh. The student's data pertaining to knowledge on mosquito control measures were collected using pre-test. Structured teaching program was conducted on mosquito control measures. Later on Post-test data pertaining to knowledge on mosquito control measures were collected. The study proved that the structured teaching program was effective in providing knowledge on mosquito control measures. The pre-test shows that the pre-test knowledge level was inadequate 88.2% (30) and11.8% (4) had moderate level of knowledge. After Post-test 100% developed adequate knowledge on mosquito control measures. The study also showed that the t-test for pre and post test knowledge was 24.1, which indicates p<0.00001 (significant at 0.05 level). Thus the structured teaching program regarding the mosquito control measures was effective. Similarly it also showed that there is significant association between class of the students and knowledge level. That is chi-square is 6.476 which is significant at 0.05 level (p = 0.01). Similarly, there is significant association between the source of health information and knowledge level with chi-square of 15.976 which is significant at 0.05 (p = 0.0003).***

Key words: structured teaching program, mosquito control measures, quasi-experimental study on mosquito knowledge about control measures, effectiveness.

I. INTRODUCTION

Mosquito borne diseases like Malaria, Filaria, Dengue and Chikungunya are preventable diseases. If children are provided with awareness of their breeding places and control measures, children can actively involve in mosquito control, thereby decreasing the risk of these vector borne diseases. According to a report, 80% of India's population lives in malaria risk areas. [2] According to Sharma AK (2007), community participation depends upon people's knowledge, awareness and attitude towards the disease.[5]Paniker KN and Rajagopalan PK (1986) stated that the geo-climatic conditions in India are conducive for the transmission of vector borne diseases. The magnitude the mosquito menace and prevalence of mosquito borne disease depend upon various factors such as developmental activities, human interference, climatic change, availability of parasitic load in the community and socio-cultural practices.[4]

II. NEED FOR THE STUDY

ICMR (2000) reports that lack of adequate knowledge, attitude and practice of people are responsible for the proliferation of mosquitoes.[1] According Pallavi VT et.al (2016), the key success for mosquito borne diseases control depends not only on services provided by health authority but also on knowledge on clinical manifestations, awareness and early care seeking behavior of the community. She also reported that the community participation in terms of knowledge and practice regarding vector control is deficit at places and needs to be addressed for extensive mosquito control. She also reported that intensified efforts should be made towards creating public awareness and strengthening personal protective and community measures to prevent mosquito borne disease.[3]There is a need to know the existing knowledge on mosquito control measures and its variation after implementation of structured teaching program.

Singh P et.al (2006) stated that program implementers need to understand the disease related knowledge, attitude and practices regarding mosquito borne diseases and its control in community. [6]

III. OBJECTIVES

A. To assess the pre-test and post-test knowledge regarding mosquito control measures among high school children.
B. To assess the effectiveness of structured teaching program on knowledge regarding mosquito control measures among high school children.
C. To find out the association between selected demographic variables and pre-test knowledge levels of mosquito control measures.

IV. LIMITATIONS

A. The study is limited to only high school children
B. The study is limited to only school.

V. METHODOLOGY

Research design: A quasi-experimental design is used as a research design. A one group pre-test and post-test design is used to find out the effectiveness of structured teaching program on knowledge regarding mosquito control measures.

*A. Sample:*The high school children of ZP high school in selected rural area of Vizianagaram district are the setting. A sample of 34 students is selected randomly.

B. Inclusion Criteria

1) Students studying in ZP high school of Vizianagaram district.
2) Both male and female students of 6^{th} and 7^{th} standard.
3) Students who can understand Telugu and English are included in the study.
4) Students who are willing to participate in the study.

C. Exclusion Criteria

1) Students who are not willing to participate in the study
2) Students who are absent at the time of data collection.
3) *Method of data Collection:* A self-reported questionnaire is prepared by the Researcher by consulting experts. Pre-test and Post-test data on knowledge of mosquito control measures were done on high school children. After pre-test, structured teaching program was done to participants. Post –test was collected after 2 weeks of structured teaching program.
4) *Description of Tool:* There are two sections.
5) *Section-1:*The demographic data like age, sex, religion, class, type of the family, source of health information, type of house and method of disposal of refuse are included in this section.
6) *Section-2:*The items related to different types of mosquitoes, their disease causation, their breeding places, their feeding habits, their life cycle and their preventive measures are explained using structured teaching program. Each question has 4 responses. There is one right answer and 3 wrong answers. The student needs to identify and mark the correct response to each statement.
7) *Data Collection procedure:* Permission was obtained from the Principal of ZP high School, Maharajupeta at Vizianagaram district in Andhra Pradesh. Oral consent was taken from the students to participate in the study.
8) *Data Analysis:* Frequencies and percentages are used to calculate the demographic data.

D. Score Interpretation for Practices

Each correct answer is scored as “1” and wrong answer as “0”. All the answers are added to get total score. It is interpreted as following:

E. Knowledge Score Interpretation

Inadequate Knowledge	1-5
Moderate Knowledge	6-10
Adequate Knowledge	11-15

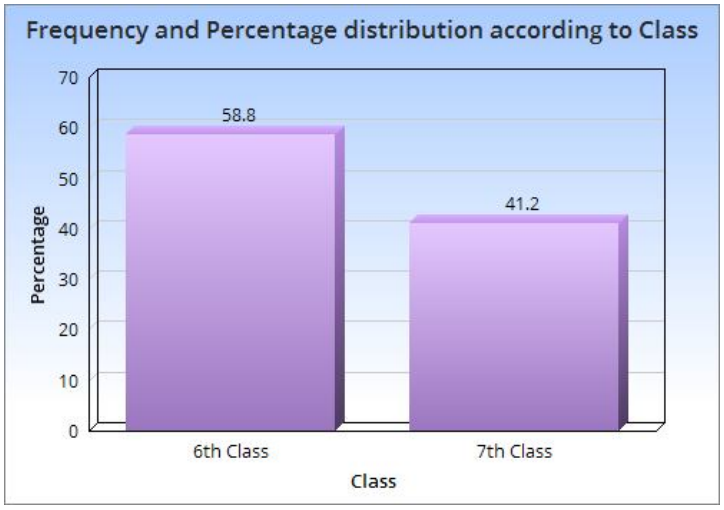

Figure-1: Frequency and Percentage distribution according to class

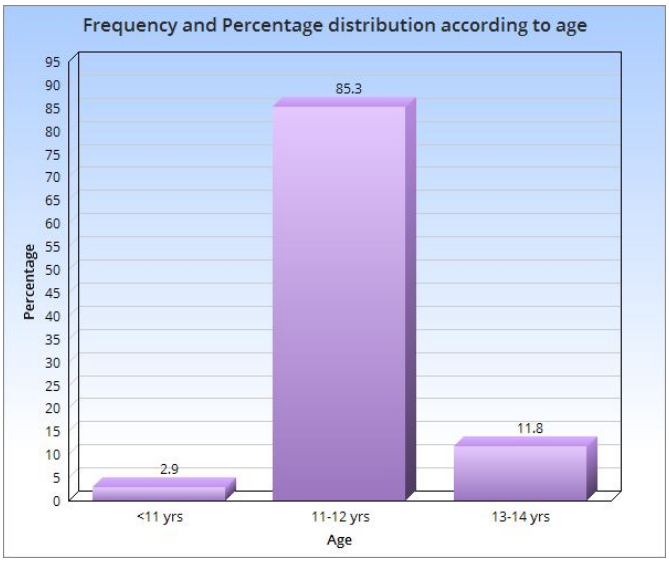

Fig-2: Frequency and percentage distribution according to age

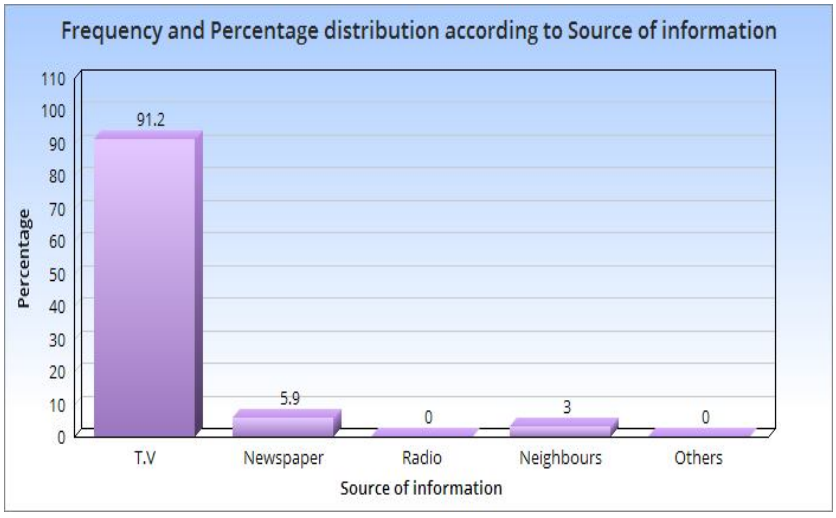

Fig-3: Frequency and percentage distribution according to Source of information

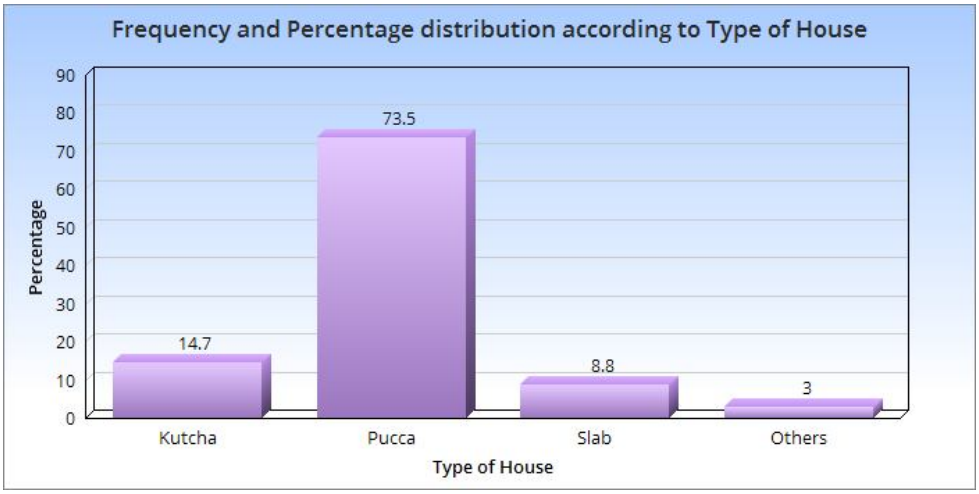

Fig-4: Frequency and percentage distribution according to type of house

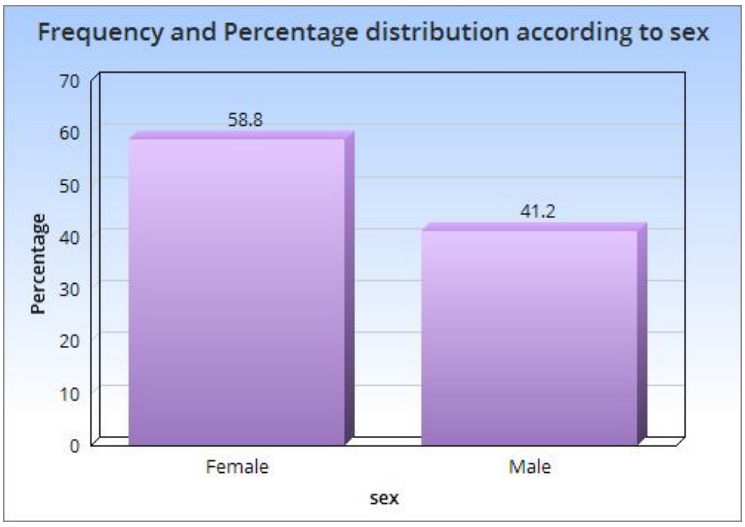

Fig-5: Frequency and percentage distribution according to Sex

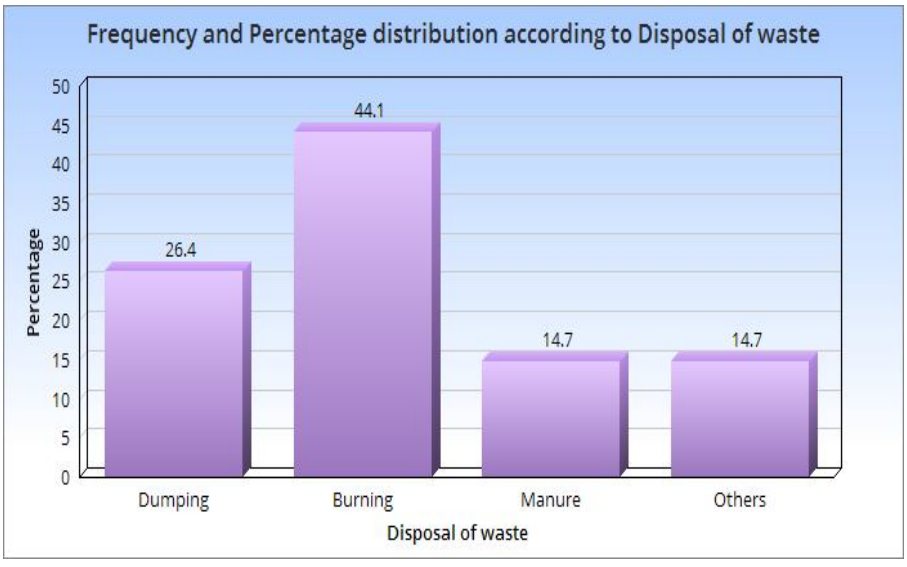

Fig-6: Frequency and percentage distribution according to disposal of waste

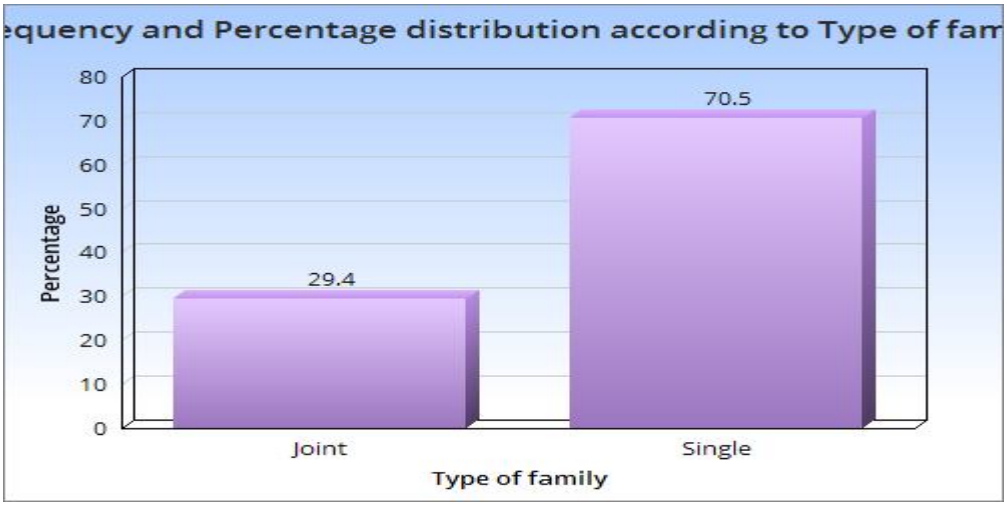

Fig-7: Frequency and percentage distribution according to type of family

Table-1: Comparison of pre-test and post-test knowledge on mosquito control measures among high school children:

	Knowledge levels					
	Inadequate Knowledge		Moderate Knowledge		Adequate Knowledge	
	Frequency	Percentage	Frequency	Percentage	Frequency	Percentage
Pre-Test	30	88.2	4	11.8	0	0
Post-Test	0	0	0	0	34	100

Table-2: Effectiveness of structured teaching program on knowledge on mosquito control measures among high school children:

Knowledge	Mean	SD	Mean difference	df	Paired T-test	P-value
Pre-Test	4	1.8	8.8	33	24.21	<0.00001*
Post-Test	12.8	1.0				

Table-3: Association between selected demographic variables and pre-test knowledge levels of mosquito control measures among high school children:

S.No	Demographic variables	Knowledge levels			df	X^2	p-value
		Inadequate Knowledge	Moderate Knowledge	Adequate Knowledge			
1.	Age						
	<11 yrs	1	0	0	2	0.865	0.649
	11-12 yrs	26	3	0			
	13-14 yrs	3	1	0			
2.	Sex						
	Female	0	0	0	1	2.131	0.143
	Male	30	4	0			
3.	Religion						
	Hindus	30	4	0	3		
	Christians	0	0	0			
	Muslims	0	0	0			
	Others	0	0	0			
4.	Class						
	6^{th} Class	20	0	0	1	6.476	0.01*

	7th Class	10	4	0			
5.	Type of family						
	Joint	8	2	0	1	0.926	0.336
	Single	22	2	0			
6.	Source of information						
	T.V	29	2	0	4	15.976	0.0003*
	Newspaper	0	2	0			
	Radio	0	0	0			
	Neighbors	1	0	0			
	Others	0	0	0			
7.	Type of House						
	Kutcha	4	1	0	3	0.861	0.834
	Pucca	22	3	0			
	Slab	3	0	0			
	Others	1	0	0			
8.	Method of disposal of refuse						
	Dumping	9	0	0	3	3.173	0.365
	Burning	12	3	0			
	Manure	5	0	0			
	Others	4	1	0			

III. DISCUSSION

In the present study, the source of health information was T.V 91.2% (31) and Newspaper 5.9% (2) and from neighbors 3.0% (1). But none of the students mentioned about the information obtained from the health personnel and community health nurses. These findings are similar to the study findings of Ravi Kumar and Gururaj (2005) that appropriate communication channels are to be used to make the health education strategy effective. Television and cinema have been quoted as important sources of information. In the sampled population in the urban area, television and newspapers were the major available media at home. In the rural area, television and radio were the major media available at the household level. These media have to be effectively used. There is need to build appropriate information, education and communication materials to achieve social mobilization. It is disappointing to note that doctors/health workers form a rather infrequent source of knowledge. This shows poor interpersonal communication taking place between doctors/health workers and people. This needs significant improvement.[7]

Table-2 shows that the pre-test knowledge level was inadequate 88.2% (30) and11.8% (4) had moderate level of knowledge. These findings were similar to the study conducted byRavi Kumar and Gururaj (2005) that a considerable number was not aware of preventive measures against mosquitoes at community level. Regarding the measures being taken by the government for mosquito control, people mentioned about spraying chemicals, cleaning the drains, etc. However, they did not mention about health education activities. This shows that the reach of health education campaigns has been quite limited.[7]

In the present study during Post-test, the knowledge levels were adequate levels for 100% (34) students.Table-3 shows that the t-test for pre and post test knowledge was 24.1, which indicates $p<0.00001$ (significant at 0.05 level). Thus the structured teaching program regarding the mosquito control measures was effective.is significant at 0.05 level ($p = 0.01$). Similarly, there is significant association between the source of health information and knowledge level with chi-square of 15.976 which is significant at 0.05 ($p = 0.0003$).

A. Implications to Nursing

1) *Nursing Practice:* Awareness programs can be implemented among nurses through in-service and continuing education to enhance prevention of mosquito borne diseases. Nurses are the people who are in constant contact with patients in hospital and people at community areas. Nurses working in the community set up can design various activities like role play, video etc on

prevention of mosquito borne diseases. Activities such as an environmental control action plan and creation of a mosquito control "checklist" and implementation for houses and schools as a means to increase self-efficacy should be promoted.

2) *Nursing Education:* The theoretical knowledge developed in the nursing curriculum on mosquito control measures can be utilized to provide health education to people at community and hospital areas. The determinants of collective efficacy in mosquito larval control should be explored. Teachers play an important role in facilitating of health promotion in mosquito endemic areas. Students and teachers should be properly oriented to carry out personal, school and community mosquito control measures. Antecedent to this is an understanding of students' perceptions about mosquito control.
3) *Nursing Research:* An extensive research on promoting the mosquito control measures need to be developed so that nurses working in community and hospital can use various strategies to promote health of people.
4) *Recommendation*

1) Similar study can be done on urban schools
2) Similar study can be done with large sample.
3) Similar study can be done on people living in urban or rural areas.

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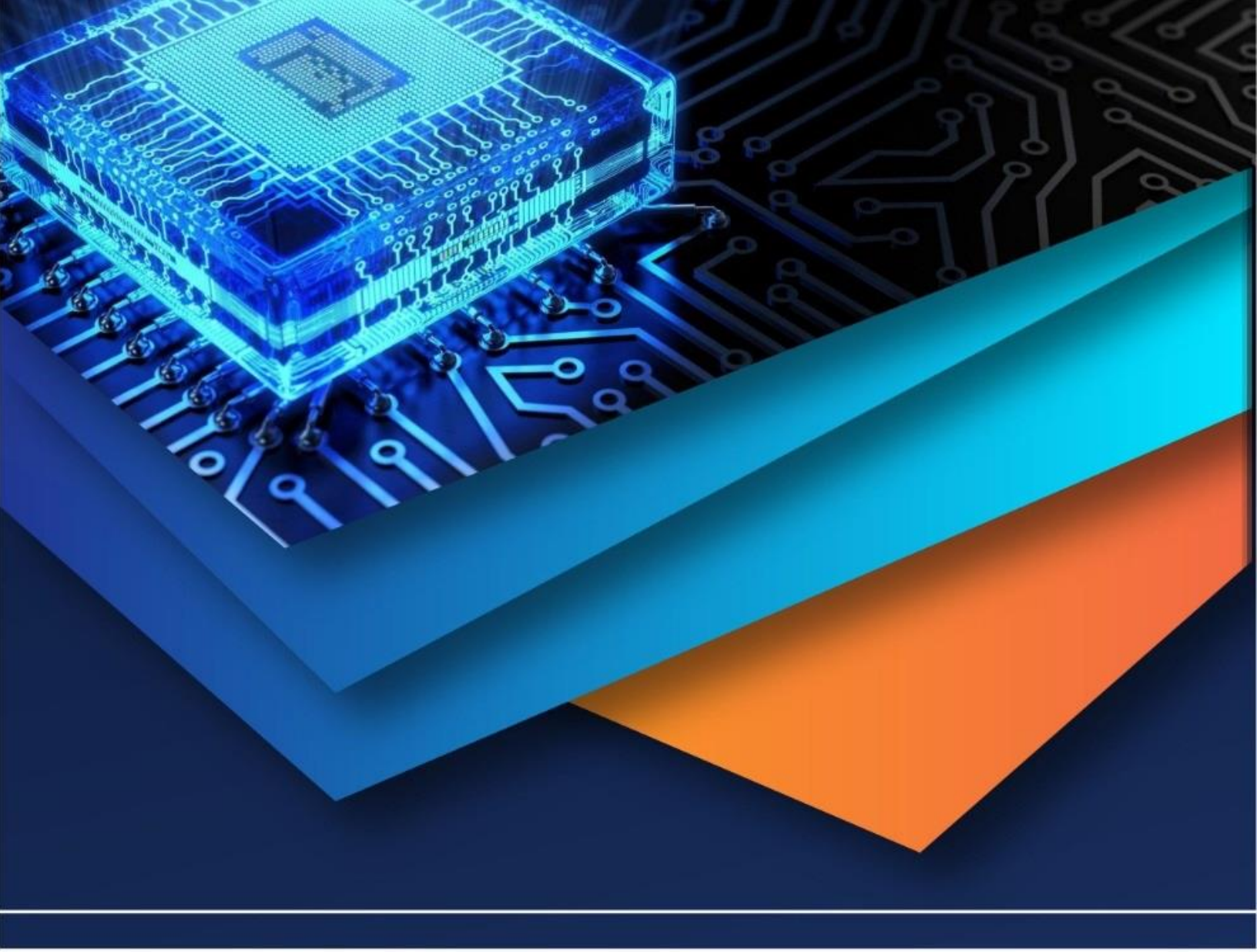

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