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A Study to Evaluate the Effectiveness of Planned Teaching Program Regarding Occupational Health and Hazard in Terms of Knowledge among Workers Working in Modi Continental at Modipuram Meerut, UP

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Abstract: ***Background of the study: Occupational health is a multidisciplinary activity aimed at the protection and promotion of the health of workers by preventing and controlling occupational diseases and accidents and by eliminating occupational factors and conditions hazardous to health and safety at work. Occupational risks and hazards are the health problems employees' face in their work environment and how those health problems affect the health status of employee and their family. It can also be defined as diseases, accidents and other hazards arising from the work environment or situations that arise in the attempt to perform tasks in any occupation. It is a compensable disease that arises out of and in the course of employment. The process of rubber manufacturing is complex and continually changing, thus making the study of occupational exposures in the rubber industry difficult. Rubber workers' route and compounds of chemical exposure depend largely on the specific employee work task and environment. In 1994, the Centers for Disease Control and the National Institute for Occupational Safety and Health summarized these various exposures. Thus this study was needed for the assessment of knowledge of factory workers so that they can be work in a safe and healthy working environment.***

Statement of the problem:

" A STUDY TO EVALUATE THE EFFECTIVENESS OF PLANNED TEACHING PROGRAM REGARDING OCCUPATIONAL HEALTH AND HAZARD IN TERMS OF KNOWLEDGE AMONG WORKERS WORKING IN MODI CONTINENTAL AT MODIPURAM MEERUT "

Objectives:

1. ***To assess the existing level of knowledge of workers regarding occupational health and hazards among workers.***
2. ***To assess the post test level of knowledge of workers regarding occupational health and hazards among workers.***
3. ***To analyze the effectiveness of planned teaching program regarding occupational health and hazards.***
4. ***To find out the association between post test knowledge score of workers regarding occupational health and hazards with selected demographic variables.***

RESEARCH HYPOTHESIS (AT 0.05 LEVEL OF SIGNIFICANCE)

H1- The mean post-test knowledge score will be significantly higher than the pretest knowledge score after providing planned teaching program on occupational health and hazards.

H2- There will be significant association between post test knowledge scores of workers with selected socio demographic variables.

H0- There will be no significant association between post test knowledge scores of workers with selected socio demographic variables.

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RESEARCH METHODOLOGY: ***In the present study Quasi – experimental design (Non – equivalent pre test and post test) was considered to be appropriate to evaluate the effectiveness of planned teaching program regarding occupational health and hazard in terms of knowledge among workers working in Modi continental at Modipuram Meerut."***

RESULT: ***result of this study shows that the mean post –test knowledge score (16.6) of workers on occupational health and hazards was higher than the mean pre - test knowledge score (9.13). There was a higher standard deviation from the post –test (4.10) to pre – test (1.56).in experimental group mean post – test knowledge score of a workers (16.6) was higher than the mean pre –test knowledge score (9.13) with the mean difference of 7.47 .***

CONCLUSION OF THE STUDY: ***The obtained mean difference was found to be statically significant as evident from the obtained't' value (9.96) for df (29) at 0.05 level of significance. This shows that obtained mean differences was a true differences and not by chance. Hence null hypothesis H0 was accepted and research hypothesis H1 was accepted. It can be inferred that the Structured Teaching Program for workers regarding occupational health and hazards was effective method for improving the knowledge of workers.***

I. INTRODUCTION

A. *Background Of The Study*

"Work injuries and illnesses can affect every aspect of life for workers and their families." Maine Department of Labor

Employment and working conditions in the formal or informal economy embrace other important determinants, including, working hours, salary, workplace policies concerning maternity leave, health promotion and protection provisions, etc. An occupational hazard is a hazard experienced in the workplace. Occupational hazards can encompass many types of hazards, including chemical hazards, biological hazards (biohazards), psychosocial hazards, and physical hazards. In the United States, the National Institute for Occupational Safety and Health (NIOSH) conduct workplace investigations and research addressing workplace health and safety hazards resulting in guidelines. The Occupational Safety and Health Administration (OSHA) establish enforceable standards to prevent workplace injuries and illnesses.

B. *Statement Of The Problem*

" A STUDY TO EVALUATE THE EFFECTIVENESS OF PLANNED TEACHING PROGRAM REGARDING OCCUPATIONAL HEALTH AND HAZARD IN TERMS OF KNOWLEDGE AMONG WORKERS WORKING IN MODI CONTINENTAL AT MODIPURAM MEERUT "

C. *Objectives*

1) To assess the existing level of knowledge of workers regarding occupational health and hazards among workers.
2) To assess the post test level of knowledge of workers regarding occupational health and hazards among workers.
3) To analyze the effectiveness of planned teaching program regarding occupational health and hazards.
4) To find out the association between post test knowledge score of workers regarding occupational health and hazards with selected demographic variables.

D. *Operational Definitions*

1) *Evaluate;* It refers to judge or to determine the significance, worth or quality of experiment. In this study it determines the knowledge of workers regarding occupational health and hazard.
2) *Eefectiveness:* It refers to the degree to which extend something is successful to produce desired result. In this study it is estimated to which extend the planned teaching program has enhanced the knowledge of workers regarding occupational health and hazard.
3) *Planned Teaching Program:* It is an educational program regarding occupational health and hazard which will help to improve the complete functional and behavioral qualities of workers in working area.
4) *Occupational Health:* It is the branch of medicines that deals with the prevention and treatment of job related injuries and illness.
5) *Occupational Hazard:* A risk accepted as a consequence of a particular occupation. In this study the accepted consequences related to rubber industrial work is to be assessed.
6) *Knowledge:* It refers to the level of understanding of facts, information and skill acquired through experience. In this study it is measured by the correct responses of workers to the knowledge item of the questioners regarding occupational health and hazard.

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II. RESEARCH APPROACH

The research approach of the present study is **quantitative approach.**

A. Research Design

In the present study Quasi – experimental design (Non – equivalent pre test and post test) was considered to be appropriate to evaluate the effectiveness of planned teaching program regarding occupational health and hazard in terms of knowledge among workers working in Modi continental at Modipuram Meerut."

B. Study Settings

The study was conducted in continental India private limited Modipuram, Which is situated in Meerut Haridwar bypass road.

1) *Sample:* It is a subset of the population selected for the study which comprises of all workers working in continental India private limited at Meerut.
2) *Sample Size:* Sample size of present study consists of 50 workers working in continental India private limited at Meerut.
3) *Sampling Technique:* Non probability Purposive sampling technique will be adopted.

C. Criteria For Sample Selection

1) *Inclusion Criteria*

a) Workers who are willing to participate in the study.
b) Workers who are available during the study period.

2) *Exclusion Criteria*

a) Workers who are in the administrative and managerial posts

D. Description Of Tool And Scoring Procedure

The tool consist of:

1) *Tool I:* Demographic data Items on demographic variables consist Age, working experience in factory, educational status, any previous session attended regarding occupational health and hazard and exposure to occupational hazard.
2) *Tool II:* Closed ended Knowledge items on occupational health and hazards. This section deals with close ended questionnaire which was used to assess the knowledge regarding occupational health and hazards.

LEVEL OF KNOWLEDGE	SCORE
Excellent Knowledge	25 - 30
Very Good Knowledge:	19-24
Adequate Knowledge:	13 -18
Average Knowledge:	7-12
Poor Knowledge	0-6

III. METHODS OF DATA COLLECTION

1) *Section-1:* Frequency and percentage distribution of demographic variables of the samples.
2) *Section-2:* Analyze the pre test and post test knowledge score of experimental and control group based on closed ended knowledge questionnaire.
3) *Section-3:* Analysis of association between the pre test knowledge scores among the workers with their selected demographic variables.

TABLE NO-2

Analyze the pre test and post test knowledge score of experimental and control group based on closed ended knowledge questionnaire.

SL.	Sample characteristics	Experimental group		Control group	
		Frequency	Percentage	Frequency	Percentage
1.	Age of the worker:-				
	21-25years	3	12%	4	16%
	26-30years	8	32%	7	28%
	31-40 years	10	40%	9	36%
	40 and above	4	16%	5	20%
2.	Gender				
	Male	23	92%	24	96%
	Female	2	8%	1	4%
3.	Marital status				
	Married	3	12%	4	16%
	Unmarried	21	84%	20	80%
	Separated	1	4%	1	4%
4.	Type of family				
	Nuclear	19	76%	20	80%
	Joint	6	24%	5	20
5.	Educational qualification				
	Primary school education	1	4%	1	4%
	High school education	5	20%	4	16%
	Intermediate education	16	64%	18	72%
	Graduate and above	3	12%	2	8%
6.	Working experience in rubber factory				
	a) 0-5years	12	48%	14	56%
	b) 6-10 years	7	28%	6	24%
	c) 11-15years	5	20%	4	16%
	d) 16 years and above	1	4%	1	4%
7.	Previous session attended related to occupational health and hazards				
	a) Yes	6	24%	5	20%
	b) No	19	76%	20	80%

A. In Experimental Group

1) Among 25 samples 3 (12%) were of age 21-25years, 8(32%) were at the age of 26-30years , 10 (40%) were at the age of 31-40 years and 4 (16%) were at the age of 40 and above .

2) Among 25 samples 23 (92%) were male and 2 (8%) were female.

3) Among 25 samples 19(76%) were having nuclear family most of them 6(24%) were having joint family.

4) Among 25 samples 1(4%) was Primary school educated, 5 (20%) were having high school education and 16 (64%) were having intermediate education and 3 (12%) were having Graduate and above qualification.
5) Among 25 samples 12 (48%) were having 0-5years experience,7 (28%) having 6-10 years, 5 (20%) having 11-15years,1 (4%) was having 16 years and above experience.
6) Among 25 samples 6(24%) were having previous session attended related to occupational health and hazards and 19 (76%) were not having previous session attended related to occupational health and hazards.

B. In Control Group

1) Among 25 samples 4 (16%) were of age 21-25years, 7(28%) were at the age of 26-30 years , 9 (36%) were at the age of 31-40 years and 5 (20%) were at the age of 40 and above.
2) Among 25 samples 24 (96%) were male and 1 (4%) was female.
3) Among 25 samples 20 (80%) were having nuclear family most of them 5(20%) were having joint family.
4) Among 25 samples 1 (4%) was Primary school educated, 4 (16%) were having high school education and 18 (72%) were having intermediate education and 2 (8%) were having Graduate and above qualification.
5) Among 25 samples 14 (56%) were having 0-5years experience, 6 (24%) having 6-10 years, 4 (16%) having 11-15years, 1 (4%) was having 16 years and above experience.
6) Among 25 samples 5(20%) were having Previous session attended related to occupational health and hazards and 20(80%) were not having Previous session attended related to occupational health and hazards

TABLE NO-3

Mean and standard deviation of pre – test and post – test knowledge score of Experimental Group

N = 25

Knowledge Score Of Experimental Group	Mean	Standard Deviation
Pre –test	9.13	1.56
Post – test	16.6	4.10

Data represented in **table 3** show that the mean post –test knowledge score (16.6) of workers on occupational health and hazards was higher than the mean pre - test knowledge score (9.13). There was a higher standard deviation from the post –test (4.10) to pre – test (1.56). It is inferred that there is marked gain in knowledge in experimental group post – test rather than pre – test.

Table – 4

Mean ,mean differences , standard deviation of difference , standard error of mean difference and 't' value of pre – test and post – test knowledge scores of workers in experimental group .

N = 25

Knowledge Score Experimental Group	Mean	Mean Difference	SD_D	SE_{MD}	't'
Pre test	9.13	7.47	4.86	1.28	9.96*
Post test	16 .6				

*df-29 ('t' = 2.05) , p<0.05 level of significant, 't'= 9.96 *

The data presented in the table 3 show that in experimental group mean post – test knowledge score of a workers (16.6) was higher than the mean pre –test knowledge score (9.13) with the mean difference of 7.47 . The obtained mean difference was found to be statically significant as evident from the obtained 't' value (9.96) for df (29) at 0.05 level of significance . This shows that obtained mean differences was a true differences and not by chance . Hence null hypothesis H01 was rejected and research hypothesis H1 was accepted . It can be inferred that the Planned Teaching Program for workers regarding importence of play need in workers was effective method for improving the knowledge of workers .

Table – 5

Frequency & percentage of pre – test and post – test knowledge score of workers of experimental group on importance of play need in workers.

N = 25

Knowledge score	Pre – test		Post –test	
	Frequency	Percentage	Frequency	Percentage
Poor Knowledge: 0-5				
Average Knowledge: 6-10	24	80%	2	6.66%
Adequate knowledge (11-15)	6	20%	9	30%
Good Knowledge (16-20)	..	..	12	40%
Vary Good Knowledge (21-25)	……	…….	7	23.33

Data represented in **table 4** depicted that 24 (80%) majority of workers in pre – test had only average knowledge,6 (20%) were having adequate knowledge . But in post – test 7 (23.33%) of workers were having vary good knowledge and 12(40%) were having good knowledge scores, 9 were having adequate knowledge and 2 (6-66%) were having average knowledge. .

This indicated that the Planned Teaching Program was effective to improve the knowledge of workers regarding importance of play need in workers.

Table – 6

Mean ,and standard deviation of pre – test knowledge score of experimental group and control group

N = 50

Pre – Test Knowledge Score	Mean	Standard Deviation
Control group (N = 25)	9.26	1.59
Experimental group (N = 25)	9.13	1.56

Data represented in **table 6** shows that the mean pre – test knowledge score of workers in experimental group was 9.13 and pre – test knowledge score of workers in control group was 9.26 . This shows that group was homogeneous in nature .

Table – 7

Mean and standard deviation of post –test knowledge score of workers in experimental group and control group

N = 50

Post – Test Knowledge Score	Mean	Standard Deviation
Control group (N = 25)	9.36	2.47
Experimental group (N = 25)	16.6	4.10

Data represented in **table 7** shows that the mean post – test knowledge score (16.6) of workers in experimental group regarding occupational health and hazards was higher than the mean post – test knowledge score (9.36) of workers in control group. There is a higher in the standard deviation from (4.10) to (2.47) .

Table – 8

Mean , mean difference , standard deviation of difference , standard error of mean difference and 't' value of post – test knowledge score of workers in experimental group and control group .

N = 50

Post – test Knowledge Score	Mean	Mean Difference	SD_D	SE_{MD}	't'
Control group (N=25)	9.36	7.24	4.95	0.65	11.13*
Experimental group (N=25)	16 .6				

df- 58 , ('t' = 2.00) $p<0.05$ level of significant, 't'= 11.13 significant

The **table 8** depicts the difference of 7.24 between post – test knowledge score of experimental group and control group of workers were found to be statically significant as calculated value of 't' (11.13) for df (58) at 0.05 level of significance . This shows the obtained mean difference was true difference and not by chance. Hence null hypothesis H02 is rejected and research hypothesis H2 is accepted . It can be inferred from the finding that planned teaching program regarding occupational health and hazards was an effective methods for increasing knowledge of experimental group workers.

C. Interpretation Of Knowledge Score

Table – 9

Frequency & percentage of knowledge scores of workers of experimental group on occupational health and hazards.

Knowledge score	Pre – test		Post –test	
	Frequency	Percentage	Frequency	Percentage
Poor Knowledge: 0-5				
Average Knowledge: 6-10	16	64%	10	40%
Adequate knowledge (11-15)	7	28%	8	32%
Good Knowledge (16-20)	2	8%	6	24%
Vary Good Knowledge (21-25)	0	0	.1	4%

Data represented in **table 9** depicted that in pre test of experimental group 2 (8%) of workers were having good knowledge and 7(28%) were having Adequate knowledge scores, 16 were having average knowledge. where as in post-test 10 (40%) of workers were having average knowledge,8 were having Adequate knowledge and 6(24%) were having good knowledge scores, 1 was having vary good knowledge. . Thus it indicated that the Planned Teaching Program was effective method to improve knowledge of workers regarding occupational health and hazards.

Table – 10

Mean ,and standard deviation of pre – test knowledge score of experimental group and control group

N = 50

Pre – Test Knowledge Score	Mean	Standard Deviation
Control group (N = 25)	9.26	1.59
Experimental group (N = 25)	9.13	1.56

Data represented in **table 10** shows that the mean pre – test knowledge score of workers in experimental group was 9.13 and pre – test knowledge score of workers in control group was 9.26 . This shows that group was homogeneous in nature .

Table – 11

Mean and standard deviation of post –test knowledge score of workers in experimental group and control group

N = 50

Post – Test Knowledge Score	Mean	Standard Deviation
Control group (N = 25)	9.36	2.47
Experimental group (N = 25)	16.6	4.10

Data represented in **table 11** shows that the mean post – test knowledge score (16.6) of workers in experimental group regarding occupational health and hazards was higher than the mean post – test knowledge score (9.36) of workers in control group. There is a higher in the standard deviation from (4.10) to (2.47) .

Table – 12

Mean , mean difference , standard deviation of difference , standard error of mean difference and 't' value of post – test knowledge score of workers in experimental group and control group .

N = 50

Post – test Knowledge Score	Mean	Mean Difference	SD_D	SE_{MD}	't'
Control group (N=25)	9.36	7.24	4.95	0.65	11.13*
Experimental group (N=25)	16 .6				

df- 58 , ('t' = 2.00) p<0.05 level of significant, 't'= 11.13 significant

The **table 12** depicts the difference of 7.24 between post – test knowledge score of experimental group and control group of workers were found to be statically significant as calculated value of 't' (11.13) for df (58) at 0.05 level of significance . This shows the obtained mean difference was true difference and not by chance . Hence null hypothesis H02 is rejected and research hypothesis H2 is accepted . It can be inferred from the finding that planned teaching program regarding occupational health and hazards workers was an effective methods for increasing knowledge of experimental group workers .

Table no 13

Association between post test knowledge of experimental and control group with their selected demographic data.

SL	Sample characterstics	Experimental group					Control group			
		Frequency	Above mean	Below mean	Chi square	P VALUE	Frequency	Above mean	Below mean	Chi square
1	Age of the workers:-									
	21-25years	3	2	1	0.115 NS	0.68	4	1	3	0.53 NS P-0.914
	26-30years	8	6	2			7	2	5	
	31-40 years	10	7	3			9	2	7	
	40 and above	4	3	1			5	2	3	
	Gender									
	Male	23	14	9	0.O	.846	24	`10	14	0.905 NS

	Female	2	1	1	37 NS		1	0	1	P-0.76
	Marital status									
	Married	3	2	1	0.40 NS	.817	4	1	3	0.38 NS P-0.83
	Unmarried	21	15	6			20	7	13	
	Separated	1	1	0			1	0	1	
	Type of family									
	Nuclear	19	12	7	0.024 NS	.875	20	8	12	0.17 NS P- 1
	Joint	6	4	2			5	2	3	
	Educational qualification									
	Primary school education	1	1	0	0.50 NS	.917	1	0	1	1.02 NS P-.769
	High school education	5	3	2			4	3	1	
	Intermediate education	16	11	5			18	8	10	
	Graduate and above	3	2	1			2	1	1	
	Working experience in rubber factory									
	e) 0-5years	12	9	3	1.204 NS	.753	14	7	7	0.98 NS P- 0.25
	f) 6-10 years	7	5	2			6	2	4	
	g) 11-15years	5	2	3			4	1	3	
	h) 16 years and above	1	1	0			1	0	1	
	Previous session attended related to occupational health and hazards									
	c) Yes	6	4	2	0.006 NS	.935	5	2	3	0.04 NS p- 0.12
	d) No	19	13	6			20	7	13	

NS- Not Significant At 0.05 level of significance

The data presented in table no 13 shows that: The chi sqaure value obtained to find out the association between post test knowledge score with their selected demographic data. There is no significance association between post test knowledge score of experimental and control group with their selected demographic data. Thus H2 hypothesis rejected and null hypothesis accepted.

IV. SUMMARY

Shows that the mean post – test knowledge score of workers in experimental group regarding occupational health and hazards was higher than the mean post – test knowledge score of workers in control group. There is a higher in the standard deviation from (4.10) to (2.47). the difference of 7.24 between post – test knowledge score of experimental group and control group of workers were found to be statically significant as calculated value of 't' (11.13) for df (58) at 0.05 level of significance . This shows the obtained mean difference was true difference and not by chance. Hence null hypothesis H0 is rejected and research hypothesis H1 is accepted. It can be inferred from the finding that planned teaching program regarding occupational health and hazards was an effective methods for increasing knowledge of experimental group workers.

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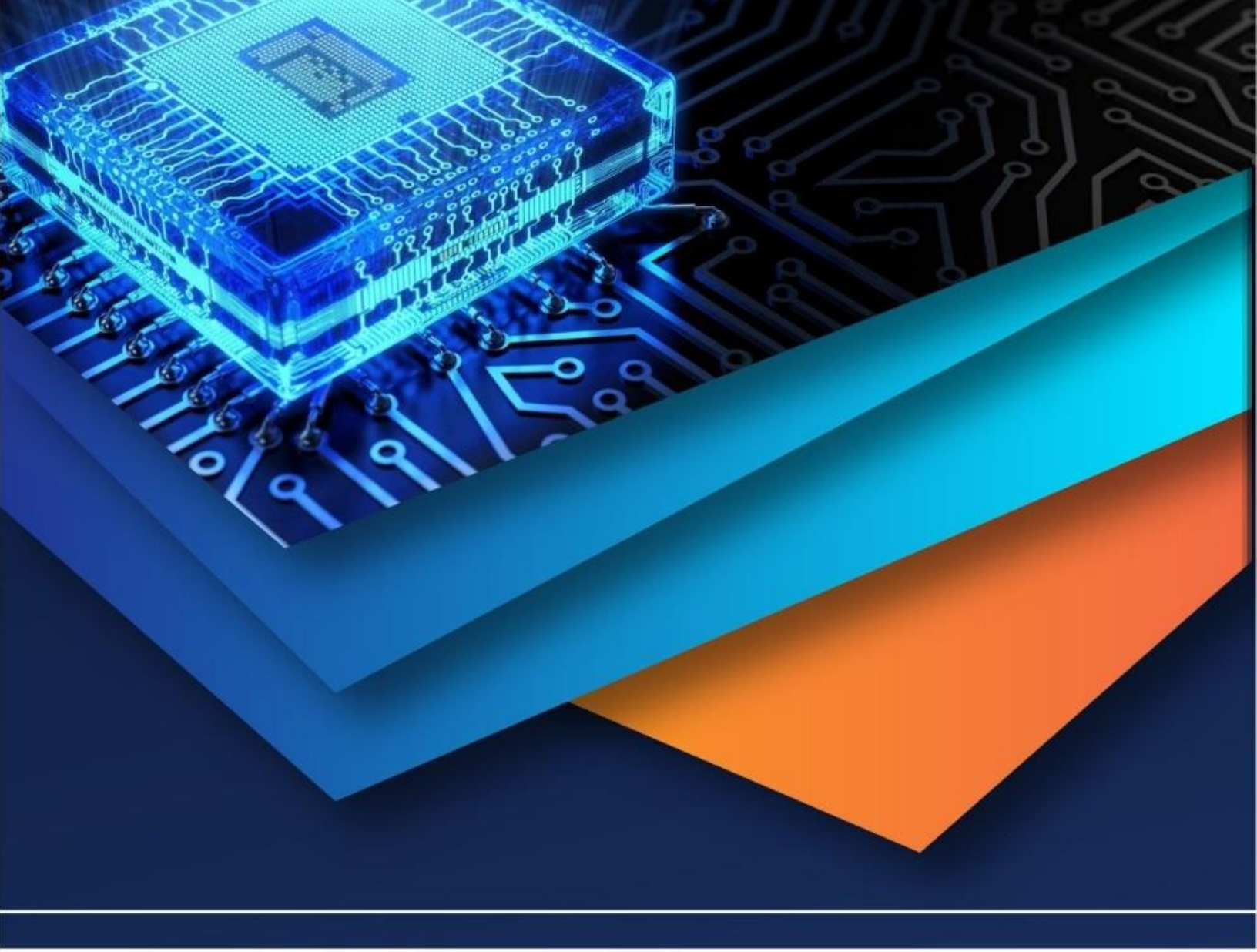

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