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"A STUDY TO ASSESS THE KNOWLEDGE AND ATTITUDE REGARDING HEALTH HAZARDS OF TATTOOING AND BODY PIERCING AMONG STUDENTS OF SELECTED SENIOR COLLEGES, WITH A VIEW TO DEVELOP AN INFORMATION BOOKLET".

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ABSTRACT

Introduction

Tattooing and body piercing are age-old cultural practices that have evolved into popular forms of personal expression among adolescents and young adults. In modern society, especially among college students, these practices are often influenced by fashion trends, peer groups, and social media. Although tattooing and body piercing are generally considered safe when performed under hygienic conditions, lack of awareness about proper procedures and aftercare can result in serious health problems such as skin infections, allergic reactions, scarring, and transmission of blood-borne diseases. Hence, understanding students' knowledge and attitude toward the health hazards related to these practices is important for promoting safer behavior.

Background

Young adults frequently opt for tattooing and body piercing without adequate knowledge of possible complications or the importance of sterile techniques. Many students rely on informal sources of information, which may be inaccurate or incomplete. This gap in knowledge may lead to risky practices and long-term health consequences. Assessing the level of awareness and attitude among college students will help in identifying existing gaps and planning appropriate educational programs to reduce health risks.

Aims

To assess the knowledge and attitude regarding the health hazards of tattooing and body piercing among students of selected senior colleges, in order to develop an information booklet for improving their awareness and safe practices.

Objectives

1. To assess the level of knowledge regarding health hazards of tattooing and body piercing among senior college students. 2. To assess the attitude regarding health hazards of tattooing and body piercing among senior college students. 3. To determine the

correlation between knowledge and attitude regarding health hazards of tattooing and body piercing. 4. To find the association between knowledge and attitude with selected demographic variables.

Methodology

A quantitative research approach with a descriptive research design was adopted for the study. The sample consisted of 100 senior college student's selected using simple random sampling technique from selected colleges in the city. Data were collected using a structured questionnaire to assess knowledge and an attitude scale to assess attitude. The collected data were analyzed using descriptive and inferential statistics based on the objectives of the study.

Result

The findings showed that 60% of students had average knowledge, 31% had poor knowledge, and only 9% had good knowledge regarding health hazards of tattooing and body piercing, with a mean knowledge score of 6.88 ± 2.57. With respect to attitude, 69% of students had a favorable attitude, 29% had a neutral attitude, and 2% showed a highly favorable attitude, with a mean attitude score of 53.05 ± 7.82. A strong positive correlation was observed between knowledge and attitude ($r = 0.889$, $p = 0.0001$). Age and undergraduate stream were significantly associated with knowledge, while age showed significant association with attitude. Other variables such as gender, academic year, residence, and family income did not show any significant association with knowledge or attitude.

Conclusion

The study concludes that although most senior college students have a favorable attitude toward the health risks associated with tattooing and body piercing, their level of knowledge remains only moderate. This indicates the need for focused health education programs to improve awareness and encourage safe practices related to tattooing and body piercing among young adults.

Recommendation's

Similar research involving larger cohorts of students could enhance the generalizability of the findings. Investigations in diverse contexts, including urban or semi-urban colleges, may elucidate the influence of environment or culture on knowledge and attitudes. Experimental studies can evaluate the influence of structured teaching programs on students' knowledge and attitudes regarding tattooing and body piercing.

(KEY WORDS: Tattooing, Body Piercing, Health Hazards, Knowledge, Attitude, Senior College Students.)

I. INTRODUCTION

People have been decorating their bodies for thousands of years, going back to ancient times. The famous mummy "Ötzi the Iceman," who lived around 3000 BC, is an example. Captain Cook also wrote about tattoos in the 18th century. He saw Polynesian body painting called "tattaw." Tattoos used to show social status, religious beliefs, important life events, and even mark slaves or prisoners. These days, people mostly get tattoos to show off their style, their spiritual beliefs, or their identity. Permanent makeup is also a popular way to make facial features look better. About 10–25% of people in modern industrialized countries have at least one tattoo. Men used to get more tattoos than women, but now women are getting them just as much.[1]

Body art includes getting tattoos, piercings, branding, and scars that permanently change the body for decoration or self-expression. These procedures break the skin, which can lead to scarring, bleeding, nerve damage, and serious infections if they aren't done in a clean way. Using dirty equipment can also spread blood-borne diseases like HIV, Hepatitis B, and Hepatitis C. Some piercings, especially on the mouth, tongue, or face, can make it hard to breathe, speak, or damage teeth and nerves. Because these changes are often permanent, you should only get body art done safely and after you know what the health risks are.[2]

Tattooing is the process of putting colored ink into the deeper layer of the skin to create a permanent design. Earlier, people used sharp tools to cut the skin and rub the pigment into the wound, but today electric tattoo machines are used, making the process more precise and less painful with only slight bleeding. The inks are made from different substances such as natural materials and synthetic dyes. Piercing involves making a small hole in the skin or cartilage so that jewelry like rings or studs can be worn. This is usually done with a special hollow needle under clean conditions. The jewelry is made from metals like stainless steel, gold, titanium, or sometimes nickel, and some of these materials can cause irritation or allergic reactions in certain people.[3]

Body piercings and tattoos are very common. Getting a tattoo or piercing can be dangerous for your health if they aren't done right. Infections are one of these risks, especially the risk of spreading bloodborne viruses like HIV, hepatitis B, and hepatitisC. It is important to make sure that all tattooing and body piercing practices are safe and consistent.[4]

In today's cultures, body modification, like tattoos and piercings, is very popular. Researchers from all over the world are interested in this growing trend. But the rise in demand has also led to more untrained and unprofessional practitioners. A lot of these don't follow the right safety and hygiene rules. Because of this, more people are reporting health problems related to getting tattoos. Skin-related problems are common and happen more often than problems with other parts of the body.[5]

II. OBJECTIVE

1. To assess the knowledge of senior college students regarding Health Hazards of tattooing and body piercing.
2. To assess the attitude of senior college students regarding Health Hazards of tattooing and body piercing.
3. To find the correlation between the knowledge and attitude of senior college students regarding Health Hazards of tattooing and

body piercing.

4. To find the association of study finding with selected demographic variables.

5. To develop and validate an information booklet regarding Health Hazards of tattooing and body piercing on the basis of study finding.

III.ASSUMPTION

Senior college student's knowledge and attitude may vary regarding health hazards of tattooing and body piercing.

IV.RESEARCH MATERIAL AND METHODS

1.1 Research Approach

A Quantitative Survey approach was adopted to assess the knowledge and attitude regarding health hazards of tattooing and body piercing among students of selected senior colleges.

1.2 Research Design

A descriptive survey design was used in the present study to assess the knowledge and attitude of senior college students regarding health hazards of tattooing and body piercing.

1.3 Population and Sample

Population: - Senior college students

Sample**: -** Students of selected senior colleges

1.4 Sample size

$$n = \frac{Z^2 P(1-P)}{d^2}$$

- If your population more than 10,000

Where

- Z: statistic for a level of confidence. (For the level of confidence of 95%, which is conventional, Z value is 1.96).
- P: expected prevalence or proportion. (P is considered 0.5)
- d: precision. (d is considered 0.05 to produce good precision and smaller error of estimate)

Z = 1.96

P=Proportion of participants had moderate adequate knowledge about Tattooing and body pearcing

= 6% =0.06

d = Desired error of margin =5% = 0.05

$n = 1.96^2 * 0.06 * (1-0.06)$

$0.05 * 0.05$

= 86.66

=87 study participants needed =100

Study Reference: Rajinimol TR, 2020 Formula Reference: -Cochran W.G. et al(1977)

Statistical Methods: - Student's t test, One way ANOVA , Chisquare Test Software Used: -SPSS 27.0 version

Study Design: - Descriptive survey design Study Setting: - Senior Colleges

Research Approach: - Quantitative Research Approach

Total number of participant :- 100

1.4 Sampling Technique of The Study

A Simple Random Sampling technique was employed to select the participants.

1.5 Sampling Criteria

- **Inclusion Criteria of The Study**

1. Senior college Students above 18 years of age.
2. Senior college students who can understand and respond to the survey in English or Hindi or Marathi.

- **Exclusion Criteria of The Study**

1. Students who were absent during the period of data collection.
2. Students who had already participated in similar type of study

1.6 Variables

- **Demographic Variables:-** Demographic variables selected for this study are age of students Age in complete years, Gender, stream of UG, Academic year of study, Belongs to area of residence, Monthly income of parents.
- **Research variables**:- In the present study, knowledge and attitude regarding health hazards of tattooing and body piercing among senior college students were considered as the research variables.

1.7 Research Question

What is the level of knowledge and attitude of senior college students regarding health hazards of tattooing and body piercing?

V. TOOL AND TECHNIQUE FOR THE STUDY

- **Section A:** Demographic data sheet covering age, gender, undergraduate stream, academic year, residence and monthly family income.
- **Section B:** Self-structured 20-item multiple-choice knowledge questionnaire. Each correct response received 1 mark and each incorrect response received 0 marks.

Table No. 3.1 Scoring of Knowledge Questionnaire

Grade	Percentage	Score
Poor	25%	1-5
Average	50%	6–10
Good	75%	11–15
Excellent	100%	16–20

- **Section C:** Self-structured five-point Likert scale for attitude. The scale contained 16 statements, including positively and negatively worded items, with responses scored according to the direction of each statement.

Table No. 3.2 Attitude Category Interpretation

Sr. No.	Score Range	Percentage (%)	Level of Attitude
1	16	0-20%	Highly Unfavorable Attitude
2	17-32	21-40%	Unfavorable Attitude
3	33-48	41-60%	Neutral Attitude
4	49-64	61-80%	Favorable Attitude
5	65-80	81-100%	Highly Favorable Attitude

VI. Validity and Reliability of Tool

Tool Validity

The content validity of the tool was established in consultation with 10 experts from various fields, which included Medical Surgical Nursing (n=10), a statistician (N=1), and language expert one. The suggestions and recommendations given by the subject experts were carefully considered, and necessary modifications were made in the tool by the investigator.

Reliability of the Tool

The reliability of the tool was established by administering the tool among 12 senior college student selected from a college other than main study setting. The split-half method was used to test reliability of the knowledge questionnaire and attitude scale. Karl Pearson's correlation coefficient was computed. And the obtained reliability coefficient was r=0.91for the knowledge questionnaire and r=0.89for the attitude scale, indicating high reliability. Hence, the tool was considered to be reliable and suitable for use in main study.

VII. DATA ANALYSIS

Frequency, percentage, mean and standard deviation were used for descriptive analysis. Pearson's correlation coefficient was used to assess the relationship between knowledge and attitude. Chi-square testing was used to examine associations with selected demographic variables. Statistical significance was considered at $p < 0.05$.

VIII. RESULT

The following findings were obtained from 100 senior college students.

Table No. 4.1: Percentage wise distribution of Senior Colleges Students according to their demographic characteristics

n=100

Demographic Variables	No. of Students	Percentage(%)
Age(yrs)		
a) 18-19 yrs	68	68%
b) 20-21 yrs	21	21%
c) 22-23 yrs	4	4%
d) 24-25 yrs	7	7%
Gender		
a) Male	66	66%
b) Female	34	34%
c) Other	0	0%
Stream of UG		
a) Arts	66	66%
b) Commerce	34	34%
Academic year of study		
a) First Year	89	89%
b) Second Year	3	3%
c) Third Year	8	8%
Residing		
a) Hostel	65	65%
b) Home	35	35%
c) Paying Guests	0	0%
Monthly Family Income(Rs)		
a) 10000-20000 Rs	50	50%
b) 21000-30000 Rs	21	21%
c) 31000-40000 Rs	12	12%
d) ≥41000 Rs	17	17%

Table 4.2: Assessment with level of knowledge score

n=100

Level of Knowledge Score	Score Range	Level of Knowledge Score	
		No of Students	Percentage (%)
Poor	0-5	31	31%
Average	6-10	60	60%
Good	11-15	9	9%
Excellent	16-20	0	0%
Minimum score		3	
Maximum score		15	
Mean Knowledge score		6.88±2.57	
Mean % Knowledge score		34.40±12.89	

The above table indicates that 31% of the senior college students had a poor level of knowledge, 60% had an average level of knowledge, and 9% had a good level of knowledge. The minimum knowledge score was 3 and the maximum knowledge score was 15. The mean knowledge score was 6.88 ± 2.57, and the mean percentage of knowledge score was 34.40 ± 12.89.

Table 4.3: Assessment with level of attitude score

n=100

Level of Attitude Score	Score Range	Level of Attitude Score	
		No of Students	Percentage
Highly Unfavorable Attitude	0-20%	0	0%
Unfavorable Attitude	21-40%	0	0%
Neutral Attitude	41-60%	29	29%
Favorable Attitude	61-80%	69	69%
Highly Favorable Attitude	81-100%	2	2%
Minimum score		40	
Maximum score		75	
Mean Attitude score		53.05±7.82	
Mean % Attitude score		66.31±9.78	

The above table shows that 29% of the senior college students had a neutral level of attitude, 69% had a favorable attitude, and 2% had a highly favorable attitude. The minimum attitude score was 40 and the maximum attitude score was 75. The mean attitude score was 53.05 ± 7.82, and the mean percentage of attitude score was 66.31±9.78.

Table 4.4: Correlation between knowledge and attitude regarding health hazards of Tattooing and Body Piercing among students of selected senior colleges

n=100

Variable	Mean	SD	Correlation 'r'	p-value
Knowledge Score	6.88	2.57	0.889	0.0001 S,p<0.05
Attitude Score	53.05	7.82		

This table shows the correlation between knowledge and attitude regarding the health hazards of tattooing and body piercing among students of selected senior colleges. Using Pearson's correlation coefficient, a significant positive correlation was found between knowledge and attitude scores (r = 0.889, p = 0.0001).

IX. DISCUSSION

The current findings contrast with those of T. R. Rajinimol (2020) concerning adolescents in Bangalore, where a significantly higher percentage (94%) exhibited insufficient knowledge regarding the effects of tattooing and body piercing. In that study, only a small number of people showed they knew enough, which suggests that levels of knowledge may differ a lot depending on where you live and how much education you have.[17]

In contrast to broader awareness studies, such as research on general populations in Saudi Arabia (Kinkar et al., 2023), which indicated that approximately 39.6% possessed substantial knowledge and many exhibited negative attitudes towards tattooing and piercing due to complications, our findings reveal a more favorable attitude among college students, potentially reflecting variations in educational attainment and peer influence.[58]

These results align with the findings of Priyanka Gudannawar and Umesh Nandgaon (2024), who indicated that among 60 adolescents evaluated, 70% possessed average knowledge and merely 20% exhibited proficient knowledge concerning the consequences of tattooing and body piercing. The researchers also found that people didn't know much about complications in general, which supports the current study's finding that people had moderate levels of knowledge.

In a similar vein, the SUPeRBA multicenter study conducted by Ripabelli et al. (2023) involving nearly 3,000 undergraduate students in Italy revealed that while 95.4% were generally cognizant of the potential health implications of body art, their specific knowledge regarding the risks associated with tattooing and piercing was notably deficient, suggesting that general awareness does not necessarily equate to profound understanding.[9]

Overall, the current findings indicate that although the majority of students possess a moderate awareness of the health risks associated with tattooing and body piercing, comprehensive knowledge remains insufficient. But a generally positive attitude toward learning about these risks shows that students are willing to learn about health issues. These comparisons with other real studies show that colleges need structured health education programs to improve both knowledge and attitudes about the risks of getting tattoos and body piercings.

X.CONCLUSION

The findings of this study shows that most senior college students have moderate level of knowledge about the health hazards of tattooing and body piercing. However, their attitudes are generally favourable. Although only a small proportion of students showed good knowledge, the overall awareness of basic health risks was encouraging. The strong positive correlation between knowledge and attitude indicated that students who have better awareness will be more responsible and health-conscious attitudes toward tattooing and body piercing. This highlights the importance of knowledge in shaping students' perceptions and behaviour regarding such health related practices.

This descriptive study assessed the knowledge and attitude regarding the health hazards of tattooing and body piercing among 100 senior college students. The findings showed that most students had average knowledge (60%) and a positive attitude (69%) toward the health hazards. A strong positive correlation was found between knowledge and attitude ($r = 0.889$, $p = 0.0001$).

XI.RECOMMENDATIONS

- Similar research involving larger cohorts of students could enhance the generalizability of the findings.
- Investigations in diverse contexts, including urban or semi-urban colleges, may elucidate the influence of environment or culture on knowledge and attitudes.
- Experimental studies can evaluate the influence of structured teaching programs on students' knowledge and attitudes regarding tattooing and body piercing.
- Comparative studies involving students from diverse academic streams or years of study can elucidate the impact of academic exposure on awareness.
- To get the most out of them, awareness programs that use peer education, workshops, or social media should be created, tested, and improved.
- Future research may investigate the correlation between students' knowledge, emotions, and actual behaviours concerning tattoos and body piercings.

XII.ETHICAL CONSIDERATIONS

- Approval from the Institutional Ethical Committee was obtained.
- Prior permission was obtained from the concerned.
- Informed written consent was obtained from all study subjects.
- Confidentiality and anonymity of the participants were strictly maintained throughout the research process.
- Participants were protected from all types of harm, ensuring their safety during both the McKenzie and Yogic exercise sessions.
- Freedom to withdraw from the study at any point in time was assured to all participants

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