Are risky behaviors associated with tattoos? The association of tattooing with non-sexual health risk behaviors among Filipino college students

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Abstract

Introduction The study aimed to determine the association of body tattooing and health risk behaviors among young adult Filipinos in a university in Metro Manila, as previous studies have linked tattooing to health risk behaviors such as alcoholism, violence, suicidality, illegal drug use and smoking.

Methods A convenience sample of students enrolled in randomly selected colleges from a university were recruited for the study. Researchers administered the Youth Risk Behavior Survey to the participants. Prevalence rate ratios were computed, and chi-square was utilized to test for significance and strength of association of the variables mentioned.

Results Among the risk behaviors studied, only smoking had a significant association with tattooing, with tattooed individuals being two times more likely to be engaged in smoking. Alcoholism, violence, suicidality and illegal drug use did not show significant associations with tattooing.

Conclusion The presence of body tattoos was associated with increased engagement in smoking behaviors, though the association between tattooing and other risk behaviors should be further explored.

Keywords: Tattooing, health risk behaviors, risk-taking

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Tattoos and body piercings have gained resurgence in popularity in modern society. A study on body modification practices among adolescents in Western cultures showed that the prevalence among Americans between the ages of 18 and 50 years was 24%, and was 19.4% among German young adults.[1] Tattooing, while associated with rebellious attitudes in the past, is now regarded as an expression of young adults' individuality, self-esteem and independence. However, several studies have shown associations between tattooing and a range of risk behaviors, including alcoholism, suicidality, illegal drug abuse and smoking.[2-6]

Gaps in the understanding of the association of tattooing with young adult health risk behavior still exist in the Asian and Philippine contexts. There has been an attempt to understand young adult health risk behavior through the Young Adult Fertility Survey of the University of the Philippines Population Institute, in coordination with the Demographic Research and Development Foundation, done every four years since 1982. However, this focused mainly on sexual risk behaviors instead of an overall understanding of young adult health risk behaviors. On the other hand, a more comprehensive tool, the Youth Risk Behavior Survey from the Centers for Disease Control and Prevention, has yet to be used in an Asian setting. No local studies have been conducted using this tool to explore the association of tattooing with risk-taking behaviors among young adults.

This study sought to fill this dearth in the literature on health risk behaviors by applying the Youth Risk Behavior Survey in the Philippine context, focusing on key health risk behaviors more prevalent in the country. The study aimed to explore the association between tattooing and alcohol abuse, violence, suicidality, illegal drug use and smoking. The results of this study may confirm or challenge the findings of Western studies on tattooing and risk behaviors among young adults. Results may also help readers understand the context of young adults and develop health programs that will address the health risk behaviors.

Methods

The study utilized a cross-sectional design which explored the association between tattoos and health risk behaviors like alcohol abuse, violence, suicide, illegal drug use and smoking among college students from a university in Metro Manila in August 2018.

The study used a convenience sample of students from several randomly selected colleges in the university. Interested students were met by the research team and oriented about the study. Informed consent was obtained from those who opted to participate and met the inclusion criteria, which were: 1) currently enrolled as a bona fide student of the university and 2) aged 18 to 30 years. The minimum required sample size was computed as 164 based on the confidence level of 95% power of 80% based on the study by Caroll.[7] A 20% buffer was added to compensate for dropouts, resulting in a sample size of 190 to 200 respondents.

A positive tattooing status was defined in the study as the presence of at least one permanent body tattoo. For risk behaviors, definitions of the terms and the rating per item from the Youth Risk Behavior Survey formulated by the Centers for Disease Control (CDC) were utilized. Alcohol abuse was defined as the consumption of alcoholic substances exceeding four or more bottles within a few hours for females, and five or more for a few hours for males for each week in a month. Violence or violent behavior was defined as possession and use of weapons, coercion, engaging in physical fights in or out of school property. Suicidality referred to the tendency of individuals to commit suicide, whether it was only thought of (ideation) or attempted. Drug abuse was the consumption of illegal substances such as marijuana, heroin or methamphetamines. Smoking referred to the use of nicotinic substances such as cigarettes, vape, e-cigarettes or tobacco.

The Youth Risk Behavior Survey, a 92-item questionnaire which was originally designed for use among a high school American audience, was utilized in this study. It contained subsets of questions for alcohol abuse (4 items), violence (6 items), suicide (5 items), drug abuse (13 items) and smoking (9 items). A respondent was considered high risk for a specific behavior if he/she scored one or more in that specific subset. Several studies have demonstrated its utility among college age populations.[9,10]

Completed questionnaires were encoded and the data gathered from the survey were processed and subjected to different analyses using SPSS for Windows. The frequency distributions of the variables was calculated for descriptive analysis including sex and age. Chi-square analyses were done to determine

if there were significant associations with alcohol abuse, violence, suicidality, illegal substance use and smoking. A p-value of 0.05 was used as the level of significance in the chi-square tests. Prevalence rate ratio was computed on significant associations to determine their strength.

The study protocol was approved by the Ethics Review Committee. Confidentiality and anonymity were maintained using codes for each participant.

Results

A total of 190 students were recruited from the different colleges of the university where the study was conducted. Three respondents submitted questionnaires with incomplete answers, leaving 187 for the analysis. As shown in Table 1, less than 10% of the participants had tattoos, and the tattooed participants were significantly older than the non-tattooed respondents ($p = 0.008$). There was no significant difference in the sex distribution between the tattooed and non-tattooed groups.

As shown in Tables 2 to 5, the odds that students with tattoos would engage in the risk behaviors studied were not significantly different from the chance that students without tattoos would engage in the same risk behaviors: alcohol abuse (PRR = 0.3, $p = 0.116$), violent behavior (PRR = 0.29, $p = 0.060$), suicide (PRR = 0.69, $p = 0.200$) and illegal drug use (PRR = 0.60, $p = 0.106$). The results showed that participants with tattoos were 2.5 times more likely to smoke than those without tattoos (PRR = 2.51, $p < 0.001$), as seen in Table 6.

Discussion

The social significance of tattooing has evolved through time, with recent studies linking tattooing with a number of risk behaviors among young adults.[3,4] Tattooed individuals have been shown to have increased likelihood for alcoholism, illicit drug use, eating disorders, self-harm and smoking.[2-4,7,8] These behaviors may have serious health implications especially on the young adult population who seem to be most vulnerable in engaging in these practices.[9,10] Hence, this study explored the association between tattooing and health risk behaviors using the Youth Risk Behavior Survey applied to college students in a university in Metro Manila. The study focused on five non-sexual risk behaviors from YRBS and their association with tattooing. Results of the study revealed that among the risk behaviors studied, only smoking had a significant association with the presence of tattoos.

Table 2. Association of tattooing and alcohol abuse among 187 participants

	High risk	Low risk	Prevalence rate ratio
Tattooed	1	10	0.36 (p = 0.116)*
Non-tattooed	44	132	
Total	45	142	
Total prevalence	24.1%	75.9%	

* Chi-square test

Table 3. Association of tattooing and violent behavior among 187 participants

	High risk	Low risk	Prevalence rate ratio
Tattooed	1	10	0.29 (p = 0.059)*
Non-tattooed	55	121	
Total	56	131	
Total prevalence	31.5%	68.5%	

* Chi-square test

Table 1. Comparison of demographic characteristics between tattooed and non-tattooed participants (n = 187)

Demographic variable	Tattooed	Non-tattooed	Total	p-value
Age (yr)				
Mean ± SD	21. 6 ± 2.65	19.9 ± 1.71	20.7	0.008
Range			18 – 31	
Sex				0.184
Male	5	82	87 (46.5%)	
Female	6	94	100 (53.5%)	

Table 4. Association of tattooing and suicide among 187 participants

	High risk	Low risk	Prevalence rate ratio
Tattooed	3	7	0.69 (p = 0.200)*
Non-tattooed	77	100	
Total	80	107	
Total prevalence	42.7%	57.3%	

* Chi-square test

Table 5. Association of tattooing and illegal drug use among 187 participants

	High risk	Low risk	Prevalence rate ratio
Tattooed	3	7	0.60 (p = 0.106)*
Non-tattooed	89	88	
Total	92	95	
Total prevalence	49.2%	50.8%	

* Chi-square test

Table 6. Association of tattooing and smoking among 187 participants

	High risk	Low risk	Prevalence rate ratio
Tattooed	11	0	2.51 (p < 0.001)*
Non-tattooed	70	106	
Total	81	106	
Total prevalence	43.3%	56.7%	

* Fischer's exact test

The prevalence of tattoos among the sample was 5.9%, which is markedly lower compared to Western studies which consistently indicate a tattoo prevalence range of 20-25% among undergraduates in American universities.[11-13] However, the disparity between these prevalence rates may be explained by cultural differences as well as methods in data collection. Western cultures may be more permissive and receptive to tattooing among students, while Filipino young adult students may be more conservative and less inclined to have themselves tattooed. It has been demonstrated that exposure to, access to and acceptance of tattooing may be less among Asian college students as compared to their American counterparts.[14] The convenience sampling method employed by this study may have affected the true prevalence of tattooing among the students sampled.

The study failed to demonstrate any significant differences between alcohol abuse prevalence among tattooed and non-tattooed individuals, which is inconsistent with the findings of other studies.[2] A possible explanation for this finding is that Filipino young adults may have the same propensity for alcohol abuse, regardless of tattooing status. In this study, the prevalence of alcohol abuse in Filipino young adults was 24.5%, similar to the prevalence rate of 22.8% found in a study by Mekonen in a university population.[15]

No significant association between tattooing and violence was demonstrated in the study, which is consistent with findings from previous studies and contradicts the common media stereotype of tattooed persons being more violent compared to their non-tattooed counterparts.[5,6] There was no significant association between tattooing and suicide, which does not support previous findings by Stirn and Hinz.[3] Furthermore, there was also no significant association between tattooing and all forms of illegal drug abuse measured in the YRBS, in contrast with the findings of Martins.[4]

In this study, tattooing status and smoking were found to be significantly associated ($p < 0.001$), with a prevalence rate ratio of 2.51, which means that tattooed individuals are more than two times more likely to smoke compared to their non-tattooed counterparts. These findings confirm the literature on the association of tattooing and smoking.[5] A possible explanation for such a relationship may be attributed to the social and cultural acceptance of smoking as compared to the other health risk behaviors. Currently, it is easier, less stigmatizing, and less expensive to access cigarettes compared to alcohol and illegal substances. Smoking might be more popular and accessible to Filipino young adults, making this an important and prevalent health risk behavior.

It is important to emphasize the prevalence of health risk behaviors in vulnerable populations like young adults because these may persist even through their adulthood. Health programs will benefit from an annual assessment of such risk behaviors and tattoos can be a good tool to screen for possible risk-prone individuals.

Findings of this study are limited to the population sampled, specifically, young adults in a university in

Metro Manila. Future research studies can explore other dimensions of health risk behaviors or study other populations. Regardless of the presence of absence of tattoos, health risk behaviors among young adults should routinely be monitored. Tattooing only provides a handle on identifying possible health risk-prone individuals but health programs should continually conduct and refine their health assessments to reduce health risk among young adults. Tattooing is part of the Philippine cultural heritage and over the years has developed into an artistic vehicle of self-expression and group identification. However, several studies have linked tattooing to various health risk behaviors. This study aimed to determine the presence of associations between tattooing and certain health risk behaviors, including alcohol abuse, violence, suicide, illegal drug abuse and smoking. Results showed that of the risk behaviors studied, smoking was significantly associated with tattooing, with tattooed young adults being twice more likely to smoke compared to non-tattooed young adults. The other health risk behaviors were not significantly associated with tattooing.

The investigators recommend qualitative studies to explore the experience and reasons of participants in getting body tattoos -- which may be helpful in characterizing the current cultural and social significance of body tattoos. Other quantitative studies utilizing different populations may also be considered to further understand the association of tattoos with various health risk behaviors.

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