

Original Article

Prevalence, attitude and risk knowledge towards body art among Hong Kong college students: a single institution study

形體藝術在香港大學生中的盛行率、看法和風險知識之單一機構研究

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The prevalence, attitudes and risk knowledge towards tattooing and body piercing among young people in Hong Kong are unknown. Through a questionnaire survey, these aspects of body art in college students were studied. With a response rate of 84.7% (459/577), the prevalence of body art was estimated to be 4.75% (22/459). An egocentric motive, drinking habit and friend/family member with body art were found to be associated with those with body art. Knowledge of the related risk was mostly recognised. Compared with the western countries, our prevalence of body art is low while the associated factors are similar.

香港年輕人的紋身和身體穿孔盛行率、看法和風險知識，目前所知不多。通過問卷調查，我們研究了大學生的形體藝術以上提及的事項。回應率為 84.7% (459/577)，形體藝術的盛行率估計為 4.75% (22/459)。個人自我中心、飲酒習慣以及家人朋友有著形體藝術等因素，皆被發現與形體藝術有相關聯。而相關風險知識絕不貧乏。對比西方國家，本地形體藝術的盛行率較低，而相關因素則類同。

Keywords: Attitude and risk knowledge, body art, college students, Hong Kong, prevalence

關鍵詞：看法和風險知識、形體藝術、大學生、香港、盛行率

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Introduction

Body art, the use of body as a medium for aesthetic purpose, is gaining popularity in the western societies.^{1,2} This is especially so among young people, with body piercing and tattooing being the more common forms.¹ However, the increased popularity of body art is also accompanied with an increase in complications of these procedures.³ Infections such as hepatitis and human immunodeficiency virus infection can be acquired through contaminated needles,⁴ and rarely the ink.⁵

Long term consequences including allergic contact dermatitis, lichenoid dermatitis, granulomatous dermatitis, pseudo-lymphoma and even skin cancer.⁶⁻⁸ Hence it is important to have some understanding on this topic which may be of use for future health prevention planning. In Hong Kong, there have been no formal studies on the prevalence of body art among young people. Their attitudes towards this form of body art; knowledge of associated complications and risk are also unknown. As college students are part of the young population which has a faster increase in body art incidence, it can be used as proxy for the younger generation. The present study investigated these aspects among college students in a single institute in Hong Kong.

Method

The study was carried out in March 2019 in a tertiary institute in Hong Kong (Tung Wah College) which offers programs on nursing and medical science besides others. Subjects were recruited from students attending health education seminars. The participants were requested to complete the anonymous questionnaire and return at the end of the session. Participation was voluntary with no remunerations. The questionnaire consisted of three parts: (i) epidemiology: age, sex, smoking and drinking habits, religious belief, ethnicity and program of study; (ii) attitude towards of this form of art: motives, form of art and preferred sites, anticipated complications, sources of information, where was the body art performed, friends or family members with body art, parental approval, body art removal if cosmetically unacceptable; (iii) knowledge of associated risks (infectious and non-infectious), estimated risk (0-100%) and factors determining the risk. For those with body art, additional questions were asked on age of acquisition; any consent form signed; risk of complications explained by the artist and the hygiene conditions of the venue.

The study was approved by the Ethics Committee of Tung Wah College, Hong Kong.

Analysis

Descriptive statistics on age, sex, program of study, smoking and drinking habits, religious belief etc. The Chi square test was used to detect any association between various factors and those with and without body art. A p value of <0.05 was considered significant (<https://www.socscistatistics.com/tests/chisquare2/default2.aspx>). Odds ratio was calculated for significant factors (https://www.medcalc.org/calc/odds_ratio.php).

Results

Demographics

Five hundred and seventy-seven questionnaires were distributed and 459 of them were eligible for analysis, giving a response rate of 84.7% (459/577). The prevalence of body art was 4.79% (22/459). The demographics of the participants are shown in Table 1. Among these 459 students, 316 (68.8%) were female and 116 (25.3%) male. There were 245 (53.4%) students ≤ 20 years of age and 195 (42.5%) students aged 21 or above. Chinese (n=444, 96.7%) was the major ethnic group with only five were non-Chinese. With regard to the program of study, 404 (88%) was health-related, 42 (9.2%) was from the science stream e.g. forensic science, three (0.7%) from other programs e.g. psychology, finance. The majority of the participants (97.2%, n=446) were non-smokers and 85 (18.5%) participants were drinkers. Religious believers accounted for 76 (16.6%) of the total participants.

Attitudes towards body art

The motives for acquiring body art in order of frequency were: Like the way it looks (n=143, 39.7%), to make a personal statement (n=96, 26.7%), to be fashionable (n=78, 21.7%), to feel different (n=43, 11.9%), parent(s) do not want them to have one (n=43, 11.9%), to catch attention (n=30, 8.3%), for religious reasons (n=12, 3.3%), to be daring (n=12, 3.3%), friend(s) want them to have one (n=8, 2.2%) and parent(s) want them to have one (n=2, 0.6%) (Table 2).

Over half (65.5%, n=252) preferred tattooing while body piercing was favoured by 18.4% (n=71) of the participants and 16.1% (n=62) would accept both types (Table 3). The arms (45.3%) were the most favoured sites for body art followed by the covered parts of the body (34.1%), legs (25.2%), waist (21.1%), exposed parts of the body (14.1%), ear (13.5%), nose (2.1%), lips (2.1%) and navel (1.8%) (Table 4).

Table 1. Characteristics of participants (N=459)

	Body art	No body art	Total	%
Age				
18-20	9	236	245	53.4
21-30	13	182	195	42.5
Missing			19	4.1
			459	
Sex				
Female	19	297	316	68.8
Male	3	113	116	25.3
Missing			27	5.9
Ethnicity				
Chinese	22	422	444	96.7
Non-Chinese	0	5	5	1.1
Missing			10	2.2
Program of study				
Health related	19	385	404	88.0
Science	2	40	42	9.2
Others	0	3	3	0.7
Missing			10	2.2
Smoking				
Yes	3	1	4	0.9
No	425	21	446	97.2
Missing			9	2.0
Drinker				
Yes	10	75	85	18.5
No	10	330	340	74.1
Missing			34	7.4
Religion				
Yes	5	71	76	16.6
No	15	318	333	72.5
Missing			50	10.9

The professional body art shop (79.3%) was most chosen venue for acquiring body art, followed by shops in malls (14.5%), hospital or medical clinic (13.5%), friend (3.0%), self (2.6%) and finally parent (2.1%) (Table 5). Over half (57.0%, n=247) of the participants would seek parental approval before acquiring body art while 43% (n=186) would not (Table 3).

Slightly more than half of the participants (51.8%, n=225) had friends or family members with body art (Table 3). While 66.5% (n=284) of participants would remove the body art if the cosmetic results were not acceptable, 33.5% (n=143) preferred to leave them alone (Table 3).

Knowledge of the risks of body art

The top three complications recognised by the participants were infections (88.2%), bleeding (75.2%) and allergic reaction (69.7%). The less commonly recognised complications included hepatitis (30.3%), tetanus infection (14.1%) and cyst formation (13.9%) (see Table 6). Almost 60%

Table 2. Motives for those with and without body art (N=360)

	Body art (n)	Total (%)
Like the way it looks	10	143 (39.7%)
To make a personal statement	9	96 (26.7%)
Other reasons	3	83 (23.0%)
To be fashionable	6	78 (21.7%)
To feel different	2	43 (11.9%)
Parent(s) don't want them to have one	0	43 (11.9%)
To catch attention	3	30 (8.3%)
For religious reasons	0	12 (3.3%)
To be daring	1	12 (3.3%)
Friend(s) want them to have one	0	8 (2.2%)
Parent(s) want them to have one	0	2 (0.6%)

Table 3. Chi square correlation between those with/without body art and various parameters

		Body art	No body art	Total	P value (odd ratio)
Program	Health care	19	385	404	0.989
	Non-health care	2	40	42	
Year of study	1	4	64	68	0.205
	2	6	201	207	
	3	8	99	107	
	4	0	19	19	
	5	4	41	45	
Sex	Female	19	296	315	0.137
	Male	3	116	119	
Ethnicity	Chinese	22	422	444	1.000
	Non-Chinese	0	5	5	
Religious	Yes	5	71	76	0.449
	No	15	318	333	
Smoker	Yes	1	3	4	0.182
	No	21	425	446	
Drinker	Yes	10	75	85	0.001* (OR=4.39)
	No	10	330	340	
Motives for body art	Egocentric [‡]	20	228	248	0.007* (OR=9.74)
	Non-egocentric	1	111	112	
Body art preferred	Tattoo	15	237	252	0.554
	Body piercing	4	67	71	
	Both	2	60	62	
Sites preferred*	Obvious	8	136	144	0.981
	Non-obvious	8	134	142	
	Indifferent	6	92	98	
Anticipated complications	Yes	11	165	176	0.485
	No	11	228	239	
Where done	Professional body art shop	17	251	268	0.141
	Others	5	156	161	
Information source[§]	Media only	6	129	135	0.730
	More than media+	15	272	287	
Parental approval	Yes	9	238	247	0.117
	No	13	173	186	
Friends/family members have body art	Yes	17	208	225	0.014* (OR=3.33)
	No	5	204	209	
If cosmetic unacceptable, consider removal	Yes	17	267	284	0.272
	No	5	138	143	
Anticipate complications	Yes	11	168	179	0.459
	No	11	232	243	
Removed if unacceptable	Yes	17	272	289	0.269
	No	5	141	146	
Risk estimation	Low (<5%)	6	86	92	0.571
	Med (5-20%)	3	76	79	
	High (>20%)	10	241	251	

[‡] Reason for body art: a) Egocentric motives: Like the way it looks, to be fashionable, to make a personal statement, to feel different, to catch attention and to be daring; b) Non-egocentric reasons: parent(s) want/don't want them to have one, friend(s) want them to have one, for religious reasons

* Preferred body sites

Obvious sites: ear, nose, lip, arm, exposed part of body; Non-obvious sites: waist, navel, leg, covered parts of the body; Indifferent=obvious + non-obvious

[§] Source of information: media only: media and/or internet

Table 4. Preferred sites of body art (N=384)

	Total	%
Arm	174	45.3
Covered part of the body	131	34.1
Legs	97	25.2
Waist	81	21.1
Exposed part of the body	54	14.1
Ear	52	13.5
Nose	8	2.1
Lip	8	2.1
Navel	7	1.8
Others	43	11.2

Table 5. Favoured venue for body art (N=429)

	Total	%
Professional body art shop	340	79.3
Shop in mall	62	14.5
Hospital or medical clinic	58	13.5
Friend	13	3.0
Self	11	2.6
Parent	9	2.1
Other	22	5.1

Table 6. Complications recognised by the participants (N=439)

	Total	%
Infection	387	88.2
Bleeding	330	75.2
Allergic reaction	306	69.7
Bruising	167	38.0
Keloid	159	36.2
HIV	153	34.9
Hepatitis	133	30.3
Tetanus	62	14.1
Cyst	61	13.9
Other	10	2.3
None	10	2.3

(n=251) of the respondents considered the procedure risky (>20%) and 21.8% (n=92) believed that it was of low risk ($\leq 5\%$) (Table 3).

The more recognised risk factor of causing complications was the hygiene conditions of the workplace (75.2%), followed by the type of body art (56.7%), who performed the procedure (56.0%), place where the body art was done (43.3%) and lastly the price of the procedure (40.1%) (Table 7).

Those with body art

For the 22 students with body art, there were 19 females and 3 males (Table 3). The mean age of acquiring body art was 17.6 years (n=21, mode=18 years, range 11-23 years). Twelve (54.5%) were informed about the potential risk of the procedures but only 4 (18.2%) were asked for written consent. The hygiene conditions of the venues were rated as very clean in 7 (35%) and clean in 14 (65%).

Chi square analysis

It was found that egocentric motives (OR=9.74 p=0.007), drinking habit (OR=4.59, p=0.001) and those with friends/family members have body art (OR=3.33, p=0.014) were significantly associated with acquisition of body art (Table 3).

Table 7. Risk factors recognised by respondents (N=439)

	Total	%
Hygiene conditions of the venue	330	75.2
Type of body art	249	56.7
Who performed the procedure	246	56.0
Place where it is done	190	43.3
Price of the procedure	176	40.1
Others	15	3.4

Discussion

Our study shows that body art among college students in Hong Kong is not as high as that in Western society.^{1,2} The estimated prevalence is only 4.79% (22 out of 459) which is much lower than that in a similar study by Greif et al⁹ of more than 700 college students.^{8,9} In their study, the prevalence of tattoos was 73% (n=561) and that of body piercing was 51% (n=391). This could be due to ethnic difference as Chinese culture emphasises inner beauty over outward appearances. If we take the population between 15 to 29 years of age in Hong Kong in 2018 as 1,208,300 (<https://www.censtatd.gov.hk/hkstat/sub/sp150.jsp?tableID=002&ID=0&productType=8>), the estimated number of people with body art is 57,800. On the other hand, our study only focused on college students which is a more educated group among all youngsters and may, therefore, underestimate the prevalence of this age group as a whole. According to an American study, those with a Bachelor's degree had a lower prevalence (22.5%) compared with those who did not complete high school (42%).¹ The former may have a better understanding of the potential risks and hence more cautious about body art.

To establish one's individuality or identity seems to be the most important motive for acquiring body art in our participants. We tried to group the motives into an 'egocentric' domain which includes motives as: Like the way it looks, to be fashionable, to make a personal statement, to feel different, to catch attention and to be daring. All these motives focus on individuality. This egocentric domain as a whole, correlates significantly with body art acquisition ($p=0.006$, $OR=9.74$). This is understandable as young people are keen to express themselves and explicit body art could serve as an effective means. This motivation is stronger than those to satisfy other's wishes (parent, friend) or for spiritual reason (religious). Our result echoes with the motives given by western youth who want 'to be myself, I don't need to please or impress anyone'.^{8,9}

In this study, drinking habits are found to be associated with acquisition of body art ($p=0.001$, $OR=4.39$) which is similar to the study in the United States.¹ There has been suggestions that tattooing is associated with high risk behaviours such as alcoholism, sexual promiscuity, drug abuse etc.^{9,10} though the association was found to be weak in a recent Italian study.^{2,10} In our study, we did not enquire these high-risk behaviours. Yet we know that some people acquired body art in certain social circumstances (e.g. during party gathering) though how common it is needs to be further investigated.

The other significant factor associated with acquisition of body art is having friends / family members with body art ($p=0.014$, $OR=3.33$). This is in line with other studies.^{8,9} Again, this is obvious as youngsters are more prone to peer influence. On the other hand, more than half of our participants would seek their parent's approval (57%) which is higher than that among western youngsters (24%).^{8,9} This may again reflect an ethnic difference between Chinese and the West. Among Chinese, close family ties are fostered and parents are expected to care for the child lifelong. In return, children have to respect their parents' wishes.

In this study, arm was the most preferred site of body art in our respondents while ear, nose, lips and navel were the less preferred sites. This may well correlate with the lower preference of body piercing by our participants as these sites (ear, nose, lips, navel) are more popular for body piercing.

In our study, most of the participants were able to recognise the potential complications of body art. These include infectious (infection, HIV, tetanus, hepatitis) and non-infectious causes (allergic reaction, keloid scar, cyst, bleeding and bruising). This could be due to the fact that most of the participants are studying health-related programmes (88%). Infectious complications such as (88.2%), hepatitis (30.3%) and even human

immunodeficiency virus infection (34.9%), were the more frequently recognised complications yet the risk of contracting tetanus (14.1%) is much less appreciated. Also, while keloid and hypertrophic scar (36.2%) are easily recognised non-infectious complications, the risk of acquiring a cystic complication (13.9%) was often overlooked. Based on these observations, future education strategies should emphasis more on these under-appreciated complications.

The body art-related risk estimated by our respondents is rather high (78.2% moderate to high risk), only 21.8% would regard the risk as low (i.e. $\leq 5\%$). This is in line with other studies.¹¹ This could be due to the fact that the young are less experienced than adults and so over-estimates the risk. On the other hand, despite the anticipated risks, youngsters still want to acquire body art which may well be taken as a show of courage and a sign of being 'different from the others'.

For those with body art, we did not specifically ask for their complications and the details of the procedures performed by their artists e.g. use of sterile and disposable needles, proper hand washing etc. This information may be useful when laying down regulations for qualified professional artists. Future studies may look into this important aspect.

Limitations

College students may not be typical of all youngsters in Hong Kong and the results obtained in this study should not be over-generalised. Convenient samples adopted in this study, again, may not be representative of the all college students: obviously students from humanistic faculties were less presented in our sample in whom a higher prevalence of body art has been documented.¹¹

Conclusion

In this study, we found a comparatively low prevalence (4.79%) of body art among Hong Kong college student. Participants were knowledgeable about the potential complications of body art. Like all youngsters, their motives for acquiring body art were more egocentric, being prone to peer influence. The reason why drinking is associated with acquisition of body art is unclear. Probably the alcohol may provide courage. Future study may recruit a larger sample size and document the complications among those with body art.

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