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COVID-19, Tattoos and How It Has Affected Locus of Control, Risk-Taking Behaviour, Self-Esteem and Body Image: A Quantitative Study

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Covid-19, Tattoos and How It Has Affected Locus of Control, Risk-Taking Behaviour, Self-Esteem and Body Image: A Quantitative Study

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Abstract: This study explores how the covid-19 pandemic affected some psychological factors in people who got tattoos during or after the lockdown, the psychological factors assessed were self-esteem, risk taking behaviour, body image and locus of control. The study used a quantitative, between-subjects design to investigate the experiences of participants who acquired tattoos during the pandemic compared to those who did not. The results showed that participants who got a tattoo during the pandemic reported higher levels of self-esteem and body image satisfaction compared to those who did not get a tattoo. Furthermore, the findings suggest that individuals with tattoos may have a more external locus of control. Participants with tattoos exhibited higher levels of risk-taking behaviour compared to those without tattoos, furthermore sex affected risk-taking behaviour in tattooed individuals, and females with tattoos displayed a higher risk taking tendency than their tattooed male counterparts. Further research needs to be done while acknowledging the limitations of this study. Overall, this study is pivotal in establishing how the pandemic may have affected the aforementioned psychological factors in people with tattoos. It also adds to the growing body of literature in body modification and psychology.

Keywords:

Introduction

Tattooing and other forms of body art have been around for over five thousand years. A mummy dating back 5,300 years, discovered in an area between Italy and Austria, has tattoos on its spine, making it the oldest known example of body alteration (Deter-Wolf et al, 2016).

Body ornamentation has its roots in many subcultures and has evolved into what it is now. In contemporary society, Grumet (1983) had a psychoanalytical perspective and stated that tattoos had antisocial and narcissistic origins, and are took a psychoanalytical approach, suggesting that tattoos serve as a psychological support to boost self-esteem in individuals with low self-image. This idea can be linked to the broader concept of self-enhancement, in which individuals engage in behaviours that increase their self-esteem (Antoszewski et al, 2009). In this context, tattoos might function as a visual representation of an individual's desired self-image, compensating for perceived insecurities (Altunay et al, 2021; Nathanson et al., 2006). Karacaoglan (2012), on the other hand, proposed that tattoos provide a non-verbal means for individuals to express unresolved emotional issues when they are unable to do so verbally. This perspective aligns with the notion of emotional expression, in which individuals use various forms of communication to convey their feelings and experiences. Tattoos, as a form of artistic expression, can serve as a powerful outlet for individuals to process and share their emotions (Tabassum, 2013), particularly during challenging times (Martin, 2013). Both perspectives converge on the idea that tattoos might function as a coping mechanism in response to external events or circumstances that affect an individual's sense of control and well-being. This idea is particularly relevant in the context of the Covid-19 pandemic (WHO, 2020), which has resulted in widespread feelings of uncertainty, stress, and loss of control (Manchia et al, 2022).

The covid-19 pandemic has altered people's self-perception and body image (Hwang et al, 2020), leading to a variety of psychological implications. A multitude of empirical studies have been conducted to understand these changes better, and they shed light on various aspects of this

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phenomenon (Baceviciene & Jankausiene, 2020; Schneider et al, 2022). One significant change that arose from the pandemic was an increase in body image concerns and disordered eating behaviours (Fernandez-Aranda et al, 2020; Phillipou et al, 2020). According to Rodgers et al. (2020), prolonged confinement and social isolation during lockdowns led to greater exposure to social media and increased body dissatisfaction, due to a constant barrage of a perfect body narrative on social media (Vall-Roqué et al, 2021) . This, in turn, increased disordered eating behaviours and a negatively impacted mental health. Similarly, a study by Farrow et al. (2020) demonstrated that the disruption of daily routines, restricted access to physical activity, and altered eating patterns contributed to increased body image concerns and negative self-perceptions. As a result, many individuals could have turned to tattoos as a means of self-expression and as a way to cope with the stress and anxiety caused by the pandemic, for instance a study examined the relationship between stressful life events and alterations in physical appearance. The sample consisted of 128 individuals recruited from various housing and retail locations in Philadelphia. The results suggested a significant relationship between experiencing stressful life events and altering one's physical appearance, indicating that body image dissatisfaction as a consequence of stressful life events may provide direct motivation for changes in body appearance to promote a better body-image of oneself (Stitz & Pierce jr., 2013).

Although they may be useful in containing disease outbreaks, lockdowns can make people feel uneasy (Madhav et al., 2017). Any person who is confined may have mental health issues due to limitations on daily functioning, separation from loved ones, imminent economic difficulties, effects on education and career, a lack of leisure activities (Vieira et al, 2020). Additionally, the terminology "lockdown" carries a negative connotation since it is linked to confinement and the restriction of freedom and liberty (Brooks et al, 2020; Hossain et al, 2020). This in turn changes the perceived locus of control from internal (perception that you control your own life events) to external (perception that life events controlled by someone else) for the majority of the public, as they adhere to strict guidelines (Krampe et al, 2021; Tagini et al, 2021; Sigurvinsdottir, et al 2020). A person's sense of body image and self-esteem may suffer if they have an external locus of control, this could be because they are more likely to attribute their life events to external factors, such as luck or other people's actions, rather than their own abilities or efforts (Rotter, 1966). This can lead to feelings of helplessness and decreased motivation to improve oneself, which may negatively affect body image and self-esteem (Cash & Pruzinsky, 2002).

Empirical evidence supports the idea that an external locus of control is associated with lower self-esteem and body image satisfaction. For example, a study by O'Brien et al. (2009) found that college women with higher external locus of control scores were more likely to experience body dissatisfaction and lower self-esteem. Similarly, another study by DeCoster and Kindschi (2000) demonstrated that an external locus of control was a significant predictor of lower self-esteem among college students. Research by Furnham and Steele (1993) also indicated that an external locus of control was negatively correlated with self-esteem in a sample of British adolescents. These studies suggest that individuals with an external locus of control may be more vulnerable to negative self-perceptions and body image concerns, as they may feel that they have little control over their lives, which can lead to feelings of helplessness and low self-worth.

Additionally, the tattoo business has been expanding in recent years, but it has surged since the Covid-19 lockdown, which is evident by the news report covered by Asmelah (2021), suggesting that more individuals are getting tattoos now than before. This statement has been further bolstered by a recent press release, suggesting that the tattoo industry would soon be a 3 billion dollar industry (TheExpressWire, 2022). The increased prevalence of tattoos during the epidemic (lockdown) is suggested by a research conducted by Kluger (2022), which examines 329 "covid tattoos" uploaded on social media. Since tattoos were formerly considered taboo, the recent uptick in their popularity may also indicate higher acceptance of tattoos by the general public (Laumann & Derrick, 2006).

The Covid-19 lockdown has served as a driving force for the increased prevalence of mental health issues such as loneliness, depression, and anxiety (Catling et al., 2022). These issues may contribute to diminished self-esteem and poor body image. A recent study by Vall-Roque et al. (2021) observed a significant increase in the number of women following appearance-focused accounts and

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posting about thinness during the lockdown compared to before. Similar findings regarding low self-esteem, poor body image, and body dissatisfaction were reported in studies involving more general populations (Ahuja & Banerjee, 2021; Baceviciene & Jankauskiene, 2021). Furthermore, research by Ball & Elsner (2019) suggested that individuals with tattoos engage in ego-protective mechanisms; the more tattoos they acquire, the higher their self-esteem and body image. This implies that people with negative body image may be more inclined to get multiple tattoos or a single, more extreme (larger or vivid) tattoo.

A study by McElroy et al. (2007) proposed that lower self-esteem is associated with increased risk-taking behaviour, which could be due to individuals with low self-esteem seeking external validation and engaging in risk-taking activities to attract attention (Orth & Robins, 2014). However, more recent research conducted by Sekścińska et al. (2021) did not find significant results supporting the idea that low self-esteem leads to higher risk-taking behaviour, indicating conflicting evidence in the relationship between self-esteem and risk-taking. Considering tattoos as a form of risk-taking behaviour, the association between self-esteem and tattoos may also be complex. For example, Swami et al. (2012) found that individuals with multiple tattoos reported higher self-esteem and a greater need for uniqueness compared to those with a single tattoo or no tattoos at all. This suggests that the relationship between self-esteem and tattoos may not be linear, and factors such as the need for uniqueness or self-expression might play a role, which can be linked to locus of control, body image and getting tattoos (Ball & Elsner, 2019; Kluger, 2021).

Additionally, there is evidence to suggest that tattoos are associated with high risk-taking behaviour, as observed in studies conducted by Carroll et al. (2002) and Deschesnes et al. (2006) among adolescents. This association aligns with the findings of Karacaoglan (2012), which indicated that individuals with higher risk-taking tendencies tend to have more tattoos. The Covid-19 lockdown has also been linked to increased risk-taking behaviour in the general population (Guenther et al., 2021; Pantano et al., 2021). In support of this notion, research by Heywood et al. (2012) indicated that individuals with tattoos display higher levels of sensation seeking and impulsivity, which are factors commonly associated with risk-taking behaviour. Similarly, a study by Larkin et al. (2019) found that individuals with tattoos reported greater engagement in risky behaviors such as substance use, which further strengthens the connection between tattoos and risk-taking. Furthermore, the role of social identity in tattoo acquisition should be considered. A study by Tiggemann and Hopkins (2011) suggested that individuals who identify with certain subcultures may be more inclined to acquire tattoos as a means of expressing their social identity and belonging. This could further contribute to the observed link between tattoos and risk-taking behaviour, as individuals may engage in risk-taking activities as a way to establish or maintain their social identity.

As previously mentioned, the Covid-19 pandemic has been associated with increased external locus of control, diminished body image, and heightened risk-taking behaviour, all of which may contribute to the acquisition of tattoos, as tattoos are considered a form of risk-taking behaviour (Carroll et al., 2002; Deschesnes et al., 2006). The tattoo industry has experienced noticeable growth since the Covid-19 lockdown, as evidenced by market research (Market.biz, 2021). This indicates a potential link between the pandemic and the increased prevalence of tattoos. Although this specific connection has not been directly studied, there has been research on body image and self-esteem during the Covid-19 lockdown (Rodgers et al., 2020; Farrow et al., 2020).

This study will build on previous research, which has established connections between the pandemic and mental health issues such as loneliness, depression, and anxiety (Catling et al., 2022), as well as the pandemic's impact on body image and self-esteem (Vall-Roque et al., 2021; Ahuja & Banerjee, 2021; Baceviciene & Jankauskiene, 2021). Furthermore, the study will draw on literature that examines the relationship between tattoos and risk-taking behaviour (Carroll et al., 2002; Deschesnes et al., 2006; Karacaoglan, 2012), locus of control (O'Brien et al., 2009; DeCoster & Kindschi, 2000; Furnham & Steele, 1993), and self-esteem (Ball & Elsner, 2019; Swami et al., 2012).

This research paper aims to fill the gap in the literature by investigating the implications of the COVID-19 lockdown and its associated social restrictions on people's locus of control and tattoo acquisition. Additionally, a comparison between the self-esteem, risk-taking behaviour and body

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image of people who got a tattoo after or during the covid-19 lockdown and those who did not will also be carried out.

Methods

Participants

A total of 200 participants (109 females, 91 males)were recruited for this study. 17 participants were excluded due to incomplete data. A total of 183 particpants (109 females, 74 males; Mean age= 29.95, SD= 11.53). A total of 60 male participants had a tattoo and 24 did not have a tattoo, while a total of 69 female participants had a tattoo and 40 did not have a tattoo. The target participants for this study were individuals above the age of 18 who did or did not get a tattoo during or after the covid-19 lockdown. The participants were recruited online using social media platforms (Facebook, Whatsapp, Instagram, Twitter, Reddit, and Snapchat) via an invitation to participate in the study using a link.

Design

The study adopted a quantitative, between-subjects design. The independent variables (IVs) include sex and whether or not participants acquired a tattoo. The dependent variables (DVs) include experience during COVID-19, body image, self-esteem before and after acquiring a tattoo, and locus of control before and after acquiring a tattoo.

Materials

The study will utilized the online software a) Qualtrics (to host the study) b) SONA (to promote the study) and Microsoft Office (write up and data cleaning). Data analysis software, JASP, was also be used. Access to these software programs was provided by the University of Sunderland. Additionally, social media sites Facebook, Whatsapp, Instagram, Twitter, Reddit, and Snapchat, were also used to promote the study.

Procedure

Participants were invited to take part in the study using a link posted on social media platforms (Appendix E). Upon clicking the link, they would be directed to the participant information sheet (Appendix D), if they chose to proceed, they would then be directed towards the consent form (Appendix F), if they did not consent, they would be directed to the end of the study, if they chose to consent, then they would proceed to fill in demographic information, including age, gender, and a unique participant code if they should choose to withdraw from the study at a later date. Participants would then answer a questionnaire about whether they acquired a tattoo during or after the lockdown.

The Body Image Satisfaction Questionnaire (BISQ) (Rodrigues et al., 2021) was used to assess body image (Appendix H). The Single item self-esteem scale (Robin et al, 2001) was used to measure the participants self-esteem before acquiring a tattoo (Appendix H).

The Rosenberg Self-Esteem Scale (Rosenberg., 1965) was used to measure participants' self-esteem after acquiring a tattoo (Appendix H). The General Risk Taking Behavior Questionnaire (GRTQ) (Law et al., 2022) assessed risk-taking behaviour (Appendix H), and the Locus of Control Scale (LCS) (Rotter, 1966) measured the participants' level of external locus of control (Appendix H).

Upon completing these questionnaires, the participants would then be directed towards the debrief sheet (Appendix G) and were informed that the survey was over.

The collected data was then stored in a password-protected Excel spreadsheet and shared only with relevant bodies within the University of Sunderland. Data was analysed using IBM SPSS and JASP.

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Statistical Analyses

The data analysis included descriptive statistics, Univariate analysis of variance (ANOVA), and multivariate analysis of variance (MANOVA) and independent t-tests.

Results

Descriptive statistics were calculated for all variables, including sex, orientation, body image, tattoo presence, self-esteem (SE) after, self-esteem (SE) before, locus of control (LCS), age, and risk-taking (see Table 1 for descriptives). All variables were tested for normality using the Shapiro-Wilk test, and none of the variables were normally distributed ($p < .001$ for all variables).

Table 1. Descriptive Statistics.

	Body Image		risk Taking		LCS		SE Before		SE after	
	T	NT	T	NT	T	NT	T	NT	T	NT
Valid	119	63	119	63	119	63	119	63	119	63
Mean	3.992	3.508	54.588	35.651	5.782	10.238	38.055	75.737	52.689	53.810
Median	4.000	4.000	56.000	35.000	5.000	11.000	28.571	85.714	50.000	55.000
Std. Deviation	0.460	0.693	6.894	6.792	3.452	4.279	17.175	18.437	5.629	8.105
IQR	0.000	1.000	6.500	8.000	6.000	4.000	14.286	14.286	7.500	11.250
Skewness	-3.216	-0.781	-2.014	0.542	0.505	-0.584	1.094	-1.148	0.249	0.206
Std. Error of Skewness	0.222	0.302	0.222	0.302	0.222	0.302	0.222	0.302	0.222	0.302
Shapiro-Wilk	0.360	0.787	0.824	0.950	0.940	0.941	0.823	0.857	0.909	0.974
P-value of Shapiro-Wilk	< .001	< .001	< .001	0.013	< .001	0.004	< .001	< .001	< .001	0.209
Minimum	1.000	1.000	24.000	25.000	1.000	1.000	14.286	14.286	37.500	40.000
Maximum	5.000	5.000	66.000	52.000	17.000	20.000	85.714	100.000	72.500	75.000

The MANOVA results indicated a significant main effect of tattoo presence on the dependent variables (Pillai's Trace = 0.727, $F(5, 174) = 92.493$, $p < .001$) (Table 2). No significant main effect of sex (Pillai's Trace = 0.014, $F(5, 174) = 0.500$, $p = .776$) or interaction effect between tattoo presence and sex (Pillai's Trace = 0.047, $F(5, 174) = 1.719$, $p = .133$) was observed for any of the dependent variables.

Table 2. MANOVA: Pillai Test.

Cases	df	Approx. F	Trace Pillai	Num df	Den df	p
(Intercept)	1	6796.146	0.995	5	174.000	< .001
Tattoo	1	92.493	0.727	5	174.000	< .001
SEX	1	0.500	0.014	5	174.000	0.776
Tattoo ✻ SEX	1	1.719	0.047	5	174.000	0.133
Residuals	178					

Locus of Control: A significant effect of tattoo presence on locus of control was found ($F(1, 180) = 57.870$, $p < .001$). Participants with tattoos ($M = 5.782$, $SD = 3.452$) had a lower locus of control than those without tattoos ($M = 10.238$, $SD = 4.279$) (Table 3). This finding was further supported by the independent t-test results (Table 4) ($t(180) = -7.612$, $p < .001$).

Risk-taking behaviour: A significant effect of tattoo presence on risk-taking behaviour was found ($F(1, 180) = 312.066$, $p < .001$). Participants with tattoos ($M = 54.588$, $SD = 6.894$) demonstrated higher risk-taking behaviour than those without tattoos ($M = 35.651$, $SD = 6.792$) (Table 5). This finding was also supported by the independent t-test results (Table 4)($t(180) = 17.719$, $p < .001$). Furthermore it was found that females who got a tattoo were high risk-taking than males who got a tattoo (Table 6)

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Table 3. ANOVA: LCS.

Cases	Sum of Squares	df	Mean Square	F	p
(Intercept)	9763.126	1	9763.126	690.595	< .001
Tattoo	818.126	1	818.126	57.870	< .001
SEX	13.455	1	13.455	0.952	0.331
Tattoo ✻ SEX	11.860	1	11.860	0.839	0.361
Residuals	2516.433	178	14.137		

Table 4. Independent Samples T-Test for risk-taking and LCS.

	t	df	p
risk Taking	17.719	180	< .001
LCS	-7.612	180	< .001

Note. Student's t-test.

Table 5. Independent ANOVA: risk Taking.

Cases	Sum of Squares	df	Mean Square	F	p
(Intercept)	419904.198	1	419904.198	8870.302	< .001
Tattoo	14772.661	1	14772.661	312.066	< .001
SEX	19.116	1	19.116	0.404	0.526
Tattoo ✻ SEX	23.824	1	23.824	0.503	0.479
Residuals	8426.201	178	47.338		

Table 6. Descriptives: risk Taking.

Tattoo	SEX	Mean	SD	N
Got a tattoo	F	55.169	6.000	69
	M	54.017	7.681	60

Self-Esteem After: No significant effect of tattoo presence on self-esteem after was found (t(180) = -1.092, p = .276) (Table 7). Further analysis with independent t-test revealed that participants with tattoos (M = 52.689, SD = 5.629) had similar self-esteem after to those without tattoos (M = 53.810, SD = 8.105) (Table 9).

Self-Esteem Before: Self-Esteem Before: A significant effect of tattoo presence on self-esteem before was found (F(1, 180) = 186.868, p < .001). Participants without tattoos (M = 75.737, SD = 18.437) had higher self-esteem before compared to those with tattoos (M = 38.055, SD = 17.175) (Table 6). In the independent t-test a significant difference in self-esteem before was found between participants with tattoos (M = 38.055, SD = 17.175) and those without tattoos (M = 75.737, SD = 18.437) (t(180) = -13.726, p < .001) (Table 9).

Body Image: A significant effect of tattoo presence on body image was observed (F(1, 180) = 32.418, p < .001). Participants with tattoos (M = 3.992, SD = 0.460) had a better body image compared to those without tattoos (M = 3.508, SD = 0.693) (Table 8). The independent t-test for body image showed a significant difference between participants with tattoos (M = 3.992, SD = 0.460) and those without tattoos (M = 3.508, SD = 0.693) (t(180) = 5.629, p < .001) (Table 9).

In conclusion, the presence of tattoos had a significant effect on locus of control, risk-taking behaviour, body image, and self-esteem before the covid-19 lockdown, but not on self-esteem after

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the covid-19 lockdown. No significant main effect of sex or interaction effect between tattoo presence and sex was observed for any of the dependent variables

Table 7. ANOVA: Self-esteem Before covid.

Cases	Sum of Squares	df	Mean Square	F	p
(Intercept)	475219.780	1	475219.780	1518.280	< .001
Tattoo	58489.513	1	58489.513	186.868	< .001
SEX	142.165	1	142.165	0.454	0.501
Tattoo ✻ SEX	26.597	1	26.597	0.085	0.771
Residuals	55713.781	178	312.999		

Table 8. ANOVA: Self-esteem after covid.

Cases	Sum of Squares	df	Mean Square	F	p
(Intercept)	512723.077	1	512723.077	11917.158	< .001
Tattoo	51.713	1	51.713	1.202	0.274
SEX	11.239	1	11.239	0.261	0.610
Tattoo ✻ SEX	143.209	1	143.209	3.329	0.070
Residuals	7658.261	178	43.024		

Table 9. ANOVA: Body Image.

Cases	Sum of Squares	df	Mean Square	F	p
(Intercept)	2661.626	1	2661.626	8954.319	< .001
Tattoo	9.636	1	9.636	32.418	< .001
SEX	0.019	1	0.019	0.064	0.801
Tattoo ✻ SEX	1.809	1	1.809	6.086	0.015
Residuals	52.910	178	0.297		

Table 10. Independent Samples T-Test for Body image SE before and SE after.

	t	df	p
Body Image	5.629	180	< .001 [a]
SE Before	-13.726	180	< .001
SE after	-1.092	180	0.276 [a]

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Discussion

The purpose of the present study was to examine the differences in locus of control, body image, risk-taking behaviour, and self-esteem before the covid-19 lockdown, and self-esteem after the covid-19 lockdown between individuals who have tattoos and those who do not have a tattoo.

For locus of control the results suggests that individuals with tattoos may have a more external locus of control, consistent with previous research, but against the hypothesis of the study (Swami et al., 2012).

Regarding body image, the results showed that individuals with tattoos had significantly higher body image scores than those without tattoos. This finding supports previous research indicating that individuals with tattoos tend to have a more positive body image (Swami & Furnham, 2007), and is in line with the hypothesis.

In terms of self-esteem before COVID-19, there was a significant difference between the two groups, with individuals who later got tattoos having lower self-esteem than those who did not get tattoos. However, when considering self-esteem after COVID-19, there was no significant difference between the two groups. This result suggests that getting a tattoo may have a positive impact on an individual's self-esteem in the context of the pandemic.

Risk-taking behaviour was also found to be significantly different between the two groups. Participants with tattoos exhibited higher levels of risk-taking behaviour compared to those without tattoos. This finding is consistent with previous studies that have reported a positive association between tattoo acquisition and risk-taking behaviour (Drews et al., 2000). Sex was also found to be a significant factor in the relationship between having a tattoo and risk-taking behaviour. While it was previously mentioned that females scored higher on risk-taking behaviour than males this information contradicts the existing literature. Therefore, it is important to further investigate the role of sex in the relationship between tattoo acquisition and risk-taking behaviour.

Hence, it can be said that the present study demonstrated significant differences in locus of control, body image, risk-taking behaviour, and self-esteem between individuals with tattoos and those without. Additionally, sex was found to play a significant role in the relationship between tattoo acquisition and risk-taking behaviour. However before drawing any conclusions, it is pivotal that these results are examined with regards to previous literature.

There is some evidence that has suggested that people with tattoos tend to have a higher external locus of control (Swami et al, 2012; Koch et al, 2015). In their study, Swami et al. (2012) found that individuals with tattoos exhibited a more external locus of control compared to those without tattoos. However, it is important to consider the context in which this study was conducted, as it took place in a different cultural and temporal setting than the present research, Swami et al (2012) conducted their research in-person on 540 adults in southern-Germany and was geographically restricted, while the present study was conducted after a global pandemic, and was conducted online and did not control for geographical boundaries. Cultural factors may influence the perception and meaning of tattoos, as well as the factors that motivate individuals to get them (Swami & Furnham, 2007). The present study was conducted after the COVID-19 pandemic and was conducted online, not controlling for geographical boundaries. Cultural factors may influence the perception and meaning of tattoos, as well as the factors that motivate individuals to get them (Swami & Furnham, 2007). As such, the relationship between tattoos and locus of control might be moderated by different variables such, which could account for the discrepancy between the present study and the original hypothesis.

The COVID-19 pandemic might have affected individuals' perceptions of control and their locus of control, as the unprecedented nature of the crisis could lead to feelings of powerlessness and uncertainty (Taylor et al., 2020). This could, in turn, influence their motivations for getting tattoos and their perceptions of tattoos' impact on their locus of control (Dye et al, 2021).

A recent study conducted by Pirrone et al (2020) on a total of 150 adults, suggested that tattoos allowed individuals to gain an illusory belief of internal locus of control, while it was actually external. This study however had a sample with drug addicted adults and that could have been a contributing factor to the results. A qualitative study by Alcina (2009) also suggested that individuals are motivated to gain tattoos in order to get a higher internal locus of control, but the sample size was

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only eight individuals from a suburban locality in Orleans, United States, which brings in question the generalisability of the research.

Additionally, the studies on locus of control and tattoos have been predominantly cross-sectional, which limits the ability to draw causal conclusions from the findings (Lefcourt, 2014). It is also crucial to consider the role of individual differences in the relationship between tattoos and locus of control. Some research suggests that the reasons for getting a tattoo can vary greatly between individuals, with motivations ranging from personal expression and aesthetics to social belonging and rebelliousness (Wohlrab et al., 2007). These diverse motivations could lead to different associations between tattoos and locus of control, depending on the individual's underlying reasons for acquiring a tattoo.

People who get tattoos generally tend to have a lower self-esteem (Stitz and Pierce Jr., 2013; Altunay et al, 2021; Nathanson et al, 2006), which is associated with high external locus of control (Sadaat et al, 2012). This study found interesting results, as there is a significant interaction between tattoo acquisition and self-esteem before the Covid-19 pandemic, but not after. This suggests that the self-esteem of people who acquired tattoos after the pandemic was lower than that of people who did not have tattoos prior to the pandemic. Although there was no significant difference in the two groups' levels of self-esteem following the pandemic. It is possible that the pandemic may have influenced people's perceptions of themselves, their bodies, and their decisions related to tattoo acquisition. The global pandemic has been a significant stressor, affecting people's mental health and well-being (Pfefferbaum & North, 2020). By taking into account pertinent studies from multiple perspectives, it is possible to further investigate the observed changes in self-esteem connected to tattoos before and after the Covid-19 epidemic. The increasing use of social media and online contact during lockdowns is one explanation for the change in self-esteem connections with tattoos following the pandemic (Gori et al., 2020). This shift in social dynamics may have affected people's perceptions of their body image, self-worth, and the significance of tattoos to their self-concept, which in turn affected the results of the study. The value of tattoos as a form of self-expression or identity may have changed, for example, if people depended more on virtual self-presentation (Zhong et al., 2021). The Covid-19 pandemic has also been associated with higher levels of stress, anxiety, and depression (Salari et al., 2020), which may have contributed to a general decline in self-esteem in the population. The initial difference in self-esteem between those with and without tattoos may have also decreased by this decline in self-esteem. Additionally, studies have shown that people may use a variety of coping mechanisms when under stress, including asking for social support, adopting health-promoting habits, or changing the way they look (Park et al., 2020). For some people, tattoos might act as a coping technique, giving them a sense of control over their lives again when things are uncertain (Tiggemann & Hopkins, 2011). This could potentially explain why the initial difference in self-esteem between the two groups disappeared after the pandemic.

The present study also looked at the effect of tattoos on body image and in line with previous literature (Swami & Furnham, 2007) and our hypothesis, it was found that tattoos affected body image positively. This argument is bolstered by Clutton (2016) who explored the positive effects of tattooing on an individual's body image and self-esteem. The study used a combination of ethnographic interviews and participatory, photographic elicitation to gather data from six individuals, three of whom were tattoo artists and three who were members of the tattoo community. It was found that obtaining a tattoo can have a beneficial impact on an individual's body image, and confidence. The themes uncovered in the study provide strong evidence for the belief that tattoos can enhance one's sense of attractiveness and body image. Although Clutton (2016) employed a different research design and had tattoo artists in the participants, the results matched with that of the present study. Interestingly, a study (Kertzman et al, 2019) found contrasting results to this and found no significant difference in the body image of the participants who did and did not get a tattoo, however they had a small sample consisting only females and had followed a repertory grid technique which was a non-verbal technique that uses a person’s ability to compare elicit things and logically bases their possible perceptions on this choice (Kirk & Blincoe, 2021). This could have caused the difference in results found by Kertzman et al (2019). However, most literature suggests that tattoos affect body

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image positively, but the positive effect of tattoos on body image may also depend on the specific characteristics of the tattoo, such as the size, design, placement, and visibility (Tiggemann & Hopkins, 2011). For instance, a study has shown that females with visible tattoos report a more negative body image compared to those with non-visible tattoos, suggesting that the visibility of a tattoo can affect the relationship between tattoos and body image (Tiggemann & Hopkins, 2013). Moreover, the perception of tattoos by one's social network and the degree of social support for body modification may also influence the impact of tattoos on body image (Viren & Swami, 2012). In light of the findings from Tiggeman and Hopkins (2013), it is conceivable that people who have tattoos may take risks as a form of self-expression and as an expression of their increased confidence (Ormrod & Hagger, 2010).

According to previous literature, people with tattoos exhibit higher risk taking behaviour than people without tattoos (Larkin et al, 2019; Heywood et al, 2012; Hong & Lee, 2017). The present study also found similar results, for instance, a study by King and Vidourek (2013) conducted on 998 participants, found that tattooed participants have more risk taking tendencies, however, this study had only university students as its participants and it was structured in a monothematic way, which could affect the results (King & Vidourek, 2013). The present study on the other hand had a varied participant base, and did not employ the monothematic structure. In another study, Koch et al. (2005) discovered a positive relationship between tattoos, and risk-taking behaviors. The researchers proposed that individuals with tattoos might be more prone to sexual risk-taking due to their personality traits, however the research had a major drawback, as their research was being conducted on-campus of a university, and the prevalence of sexual activity in young adults was prevalent on campus, which could have made the data skewed (Scull et al, 2019). The present study again, overcomes this due to the use of a very diverse population, and by this being conducted online.

The present study also found that women were significantly more risk-taking than men which is in the opposite direction, as to what previous literature has found (Harris & Jenkins, 2006; Loewenstine et al, 2000). Previous literature has suggested that men are more risk-taking than women (Byrnes et al, 1999; Lighthall et al, 2009). For instance a study by Deschenes et al (2006) on 2700 adolescents suggested that adolescents boys with tattoos were more likely to be risk taking than their female counterparts, however, the study used self-report questionnaires, and the participant base was between the age of 12-18, which could lead to the participants not undertaking the study with seriousness, and could skew the results (Brener et al, 2003). Another study by Hill (2016) also found similar results, while this study was conducted on adults, it was inclusive of only American adults, and mostly university students. In a study conducted by Swami et al. (2016), tattooed adults were found to be only slightly more impulsive and willing to take risks than non-tattooed adults. The study did not find significant differences in risk-taking behaviour between tattooed men and tattooed women. This suggests that the previous literature has mixed results regarding this particular topic.

The present study found a significant sex difference in risk taking behaviour of tattooed men and women, and there could be several reasons for this. The study has been conducted after a global pandemic and lockdown, and this could have had a paradigm shift in risk-taking behaviour for tattooed men and women.

According to the opponent process theory of emotion by Mackolil and Mackolil (2021), when people are repeatedly exposed to an emotion-stimulating event, mechanisms in the central nervous system automatically oppose their initial affective reactions to produce stronger opposite affective reactions. This is particularly clear in the Covid-19 pandemic situation. In January 2020, the World Health Organisation declared the Covid-19 outbreak to be a pandemic (WHO, 2020), and panic was the primary initial affective reaction. As a result, we saw high adherence to virus mitigation strategies. This is corroborated by a review of 3,163 articles (Webster et al, 2020), which reveals that fear of contracting the virus and its consequences is one of the biggest predictors of adherence to mitigation and safety practises. The opposite affective reaction of risk-taking behaviour has emerged as a result of ongoing exposure to this emotion-stimulating event. According to Hoobler et al (2018), women are not as risk-averse as has been potrayed, which is further bolstered by a plethora of literature. For example, Byrnes et al. (1999) conducted a meta-analysis of 150 studies, and although they found men to be generally more risk-taking, the differences between genders were not as

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significant as previously believed. The gap in risk-taking behaviour varied depending on the type of risk and the context in which it was presented. Croson and Gneezy (2009) explored gender differences in preferences like risk aversion, trust, and altruism through a literature review, suggesting that women and men exhibit similar levels of risk-taking in specific contexts. They noted that when women have more information or experience in a particular domain, their risk-taking behaviour aligns more closely with men's behaviour. Additionally, they found that gender differences in risk-taking were sensitive to the situation's framing and the type of decision involved. Nelson (2013) critically re-examined the literature on gender differences in risk aversion, utilizing broader methods and a larger set of published studies. The findings revealed that gender differences in risk aversion were not as clear-cut as they might initially appear. By considering a more extensive range of studies and methods, the author demonstrated that women are not universally more risk-averse than men. The analysis emphasized the importance of considering various factors, such as cultural, situational, and methodological influences, when examining gender differences in risk-taking.

Charness and Gneezy (2012) conducted an empirical study to provide substantial evidence regarding gender differences in risk-taking behaviour. Using a combination of lab experiments and field data, they found that in certain contexts, women tended to be more risk-averse than men. However, the study also recognized that situational factors, such as familiarity with the domain or type of risk, the framing of the task, and social or cultural norms, could significantly impact gender differences in risk-taking.

Considering the aforementioned factors, and the covid-19 pandemic, it could be said that tattooed women displayed significantly higher risk-taking behaviour than men in the current study, as it has been suggested that women may take more risks than men in specific contexts and situations (Croson & Gneezy, 2009), and the Covid-19 pandemic has certainly created unique conditions that might impact risk-taking behaviour. For example, a study by Gray et al. (2020) found that women's financial risk-taking increased during the Covid-19 pandemic. This research showed that, in the face of economic uncertainty and job loss, women were more likely than men to engage in riskier financial behaviors, such as investing in volatile assets, to maintain their financial stability. Additionally, Prime et al. (2020) found that women were more likely than men to report increased work-family conflict during the pandemic, due to increased caregiving responsibilities and remote work. As a result, women may have been more inclined to take risks in their work-life balance to navigate the additional challenges posed by the pandemic. Moreover, a study by Biddle et al. (2021) found that women were more likely than men to engage in riskier health behaviors during the pandemic, such as delaying medical appointments or avoiding healthcare facilities due to fear of contracting the virus. This increase in health risk-taking could be attributed to the heightened anxiety and stress experienced by women during the Covid-19 crisis. It is important to note that these findings are not conclusive, and more research is needed to better understand the extent to which the Covid-19 pandemic has affected gender differences in risk-taking behaviour. However, these studies do suggest that the unique circumstances of the pandemic may have led women to take more risks than men in certain domains.

In conclusion, the current study attempted to investigate how tattoos affected risk-taking behaviour, locus of control, self-esteem, and body image after the Covid-19 pandemic. The results showed that before the pandemic, but not after, there was a significant interaction between getting a tattoo and one's self-esteem. This implies that the pandemic may have affected people's opinions of themselves and their choices regarding getting tattoos. This change could be explained by a number of factors, including the rise in social media use during lockdowns, changes in social dynamics, and a general decline in self-esteem brought on by the stress, anxiety, and depression brought on by the pandemic. Additionally, the study's findings that tattoos had a positive impact on body image were consistent with previous studies (Swami & Furnham, 2007; Clutton, 2016). The specifics of the tattoo, the person's social network, and their support for body modification may all have an impact on the tattoo's positive impact on body image (Viren & Swami, 2012; Tiggemann & Hopkins, 2011, 2013). The results of the current study were in line with earlier studies (Larkin et al., 2019; Heywood et al., 2012; Hong & Lee, 2017; King & Vidourek, 2013; Koch et al., 2005) in that those who had tattoos took more risks than those who did not. Contrary to some earlier research (Deschenes et al., 2006; Hill,

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2016), the study found that tattooed women significantly increased risk-taking behaviour than tattooed men. However, more recent research (Byrnes et al., 1999; Croson & Gneezy, 2009; Nelson, 2014; Charness & Gneezy, 2012) raises the possibility that gender differences in risk-taking behaviour may be more nuanced and context-dependent than previously believed. There may be differences in risk-taking behaviour between tattooed men and women due to the special circumstances of the Covid-19 pandemic. Studies have shown, as was already mentioned, that women may take more risks than men in particular contexts and situations, and the pandemic has undoubtedly produced a unique situation that may have an impact on risk-taking behaviour (Croson & Gneezy, 2009; Grey et al., 2020; Prime et al., 2020; Biddle et al., 2021).

It is impervious to highlight the limitations of this study, which includes the reliance on self-report questionnaires. Additionally, even though the study aimed to take the Covid-19 pandemic's effect on the variables into account, it is challenging to discern the pandemic's specific effects from other potential factors. This study also employed a quantitative design, which could have limited the depth and richness of the data collected, as well as the ability to capture the nuanced experiences and motivations of the participants. While quantitative approaches can provide valuable insights into broad trends and relationships, they may not fully capture the complexities of individual experiences and subjective perspectives, particularly in areas such as tattoo acquisition and its relationship with locus of control, self-esteem, body image, and risk-taking behaviour. Furthermore, this research did not control for whether the participants already had a tattoo before they got another one after the pandemic, and hence, if anybody with a prior tattoo participated in the research, the results may have been skewed.

Even so, this research serves as a cornerstone for looking at the impact of the covid-19 pandemic on multiple psychological factors. This is the first study conducted with regards to the effects of tattoos on locus of control, self-esteem, risk-taking behaviour and body image after the covid-19 pandemic. It also contributes to a growing body of literature of body art and modification. The unique circumstances of the Covid-19 pandemic and its potential impact on these relationships highlight the need for further research to better understand the interplay of individual, situational, and cultural factors in shaping people's experiences and perceptions related to tattoos. Ultimately, a more comprehensive understanding of these relationships could help to inform interventions and support for individuals who choose to acquire tattoos, as well as contribute to a broader appreciation of the diverse motivations and experiences that underlie this increasingly popular form of body modification.

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Appendix A

Ethics Approval

Downloaded: 09/03/2023
Approved: 02/03/2023

Kunal Kondhare
School of Psychology
Programme: B.Sc (Hons) Psychology

Dear Kunal

PROJECT TITLE: Tattoos: Has there been a shift in the locus of control paradigm post covid-19
APPLICATION: Reference Number 016453

On behalf of the University ethics reviewers who reviewed your project, I am pleased to inform you that on 02/03/2023 the above-named project was **approved** on ethics grounds, on the basis that you will adhere to the following documentation that you submitted for ethics review:

- University research ethics application form 016453 (form submission date: 24/02/2023); (expected project end date: 01/03/2023).
- Participant information sheet 1023950 version 3 (24/02/2023).
- Participant consent form 1023951 version 1 (08/02/2023).

If during the course of the project you need to deviate significantly from the above-approved documentation please email ethics.review@sunderland.ac.uk

For more information please visit: https://www.sunderland.ac.uk/research/governance/researchethics/

Yours sincerely

Mrs Andrea Howell
Ethics Administrator
University of Sunderland

Appendix B

Ethics Application

Ethics Application.pdf

Appendix C

Ethics application with changes and comments
Ethics Application comments.pdf

Appendix D

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Participant Information Sheet

You are being invited to take part in a research study. Before you decide whether or not to take part, it is important for you to understand why the research is being done and what it will involve. Please take time to read the following information carefully.

Study Title: Tattoos: Has there been a shift in the locus of control paradigm post covid-19

What is the purpose of the study?

This study aims to identify whether there has been a change in the locus of control amongst people who got tattoos post the covid-19 lockdown.

This research is being conducted as a part of the B.Sc (Hons) Psychology degree course at the University of Sunderland

Why have I been approached?

You have been approached either through the Sona site at the University of Sunderland or by a social media advert, because you were deemed to be eligible for the study. There will be approximately 200 other participants taking part in this study.

To be eligible for participation, it is essential that individuals are 18 or over, and have access to an electronic device such as phone or laptop. The study requires participants who have tattoos and participants who don't have tattoos. If you fit in either of the above category, you qualify to take part in this study.

Do I have to take part?

No, Participation in this study is entirely voluntary. If you decide to continue with your participation, you will be asked to complete an online consent form. You do not have to answer these questions and may skip any you do not wish to answer.

What will happen if I don't want to carry on with the study?

You have the right to change your mind and withdraw at any point of the study without giving a reason and without incurring any penalties. You can withdraw by closing the web browser during the study, or if you have completed the study by emailing the researcher with your unique participant code that you provide whilst giving consent, that will allow the researcher to identify and remove your data. You have up to 1 week after participation to withdraw your data. All data collected up to the point of withdrawal will be immediately destroyed.

What will happen to me if I take part?

You will first be asked to give consent and create a unique participant code. Then you will be asked for some demographic information, including your age, whether you got a tattoo after or during the covid-19 lockdown and biological sex. You will be asked to complete four short questionnaires to measure body image satisfaction, self-esteem, risk-taking behaviour and locus of control. This study is expected to take between 20 to 30 minutes to complete

What are the possible disadvantages and risks of taking part?

The study mentions covid-19, which could be triggering for some participants.

What are the possible benefits of taking part?

Participation will help to increase knowledge in the field of tattoos and mental health psychology.

What if something goes wrong?

If you are unhappy with the conduct of this study, please contact my supervisor, Dr Richard Darby-Davis or the Chair of the University of Sunderland Research Ethics Group, Dr John Fulton. Contact details are included below.

How will my information be kept confidential?

This study will adhere to the Data Protection Act (2018). Location-identifying data will not be collected, and all data will be completely anonymous and so that they cannot be traced back to you. My supervisor and I will have access to the data. They will be kept on password-protected computers and may be stored indefinitely. Completely anonymised data from the project may be shared with other researchers and/or used for teaching purposes. The data may be looked at by staff authorised by the University of Sunderland for audit and quality assurance purposes.

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What will happen to the results of this study?

Results will be written up in my project report and project poster. If suitable, results may be published in academic journals and/or presented at academic conferences.

Who is organising and funding the research?

The research is organised by Kunal Kondhare, a BSc (Hons) Psychology student at the University of Sunderland, Faculty of Health Sciences and Wellbeing, School of Psychology. This project is not externally funded.

Who has reviewed the study?

The study has been reviewed and approved by the University of Sunderland Research Ethics Group's review system.

Further information and contact details

Kunal Kondhare

Email: bh72vr@student.sunderland.ac.uk

Dr. Richard Darby-Davis

Email: Richard.Darby-Davis@sunderland.ac.uk

Dr John Fulton (Chair of the University of Sunderland Research Ethics Group)

Email: john.fulton@sunderland.ac.uk

Phone: 0191 515 2529

Thank you for taking time to read the information sheet!

Appendix E

Social Media Advertisement

Hello, I'm looking for participants to take part in my study, which I am undertaking as a final year student at the University of Sunderland. This study aims to assess whether there has been a paradigm shift in the locus of control of people who got tattoos after or during the covid-19 lockdown. The study would involve 4 short questionnaires and would take approximately 20-30 minutes to complete.

Anybody above the age of 18 is eligible to partake in this study. You would require access to the internet and an electronic device such as mobile phone or laptop.

If you're interested, please click on the link below to access the study.

Appendix F

Consent form

Consent Statements

When participants follow the Qualtrics link to the study, they will be directed to the participant information sheet followed by this online consent form that has to be completed (forced responses) before the study can be accessed.

	Yes	No
I confirm that I am over the age of 18.		
I confirm that I am a native English speaker.		
I confirm that I have read and understood the Participant Information Sheet.		
I understand that data gathered in this study are completely anonymous.		
I understand that the data from this study may be shared with other researchers and/or used for teaching purposes.		
I understand that my participation is voluntary and that I am free to withdraw at any time during the study by closing my web browser.		

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I agree to take part in this study.		

If any of the consent statements a given a "No" response, the participant will be denied access to the study with the statement: "Thank you for considering taking part in the study! Unfortunately, we have not received your full consent and therefore, we are not able to grant you access to the study."

If they do give their consent, they will be directed to the study. At the end of the questionnaire, participants will be directed to a final page with a "Submit" button and be made aware that by clicking "submit" they are granting permission for their data to be used in the study.

Appendix G

Debrief sheet

Debrief Sheet

Title: **Tattoos: Has there been a shift in the locus of control paradigm post covid-19**

Researcher: Kunal Kondhare

Thank you for taking part in this study. The sheet will provide you will full details of the study in which you participated.

The purpose of this study was to identify whether there has been a shift in the locus of control paradigm in people who got tattoos, during or after the Covid-19 lockdown. It has been identified that covid-19 seems to be associated with, external locus of control, low body image and higher risk-taking behaviour, and getting tattoos has been considered a risk-taking behaviour. It is visible from market research that there has been an increase in tattoos (Market.biz, 2021) since the covid-19 lockdown. This prompts an important question about locus of control in the people with tattoos. This study aims to answer this question.

All data collected is anonymous and cannot be traced back to you. Should you wish to withdraw, you can do so via your unique ID which you created at the start up to one week after completion. Again , Thank you for your participation.

Appendix H

Questionnaires used for the study.

The Body Image Satisfaction Questionnaire

Please indicate on a scale of 1 to 5, (1. "have strong negative feelings and somehow wish to change, 2 "don't like but can put up with 3. No feelings 4. Satisfied. 5. Very satisfied and consider myself fortunate) how you feel about the following items.

Items	Have strong negative feelings and wish to change somehow	Don't like it, but can put up with it	No feelings either way	satisfied	Very satisfied and consider myself fortunate
Hair					
Teeth					
Eyes					
Ears					
Nose					
Skin					
Facial aspect					

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Arms					
Chest					
Shoulders					
Abdominals					
Hips					
waist					
Glutes					
Thighs					
Legs					
Body shape					
Port					
Weight					
Height					
Physical fitness					
Vitality					
Overall					

Single Item self esteem scale

Rate the following statement on a scale of 1 to 7, with 1 being not very true of me, and 7 being very true of me.

I have high self-esteem.

Rosenberg Self-esteem scale

Below is a list of statements dealing with your general feelings about yourself. Please indicate how strongly you agree or disagree with each statement.

1. On the whole, I am satisfied with myself.	Strongly Agree	Agree	Disagree	Strongly Disagree
2. At times I think I am no good at all	Strongly Agree	Agree	Disagree	Strongly Disagree
3. I feel that I have a number of good qualities.	Strongly Agree	Agree	Disagree	Strongly Disagree
4. I am able to do things as well as most other people.	Strongly Agree	Agree	Disagree	Strongly Disagree
5. I feel I do not have much to be proud of.	Strongly Agree	Agree	Disagree	Strongly Disagree
6. I certainly feel useless at times.	Strongly Agree	Agree	Disagree	Strongly Disagree
7. I feel that I'm a person of worth, at least on an equal plane with others.	Strongly Agree	Agree	Disagree	Strongly Disagree
8. I wish I could have more respect for myself.	Strongly Agree	Agree	Disagree	Strongly Disagree
9. All in all, I am inclined to feel that I am a failure.	Strongly Agree	Agree	Disagree	Strongly Disagree

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10. I take a positive attitude toward myself.	Strongly Agree	Agree	Disagree	Strongly Disagree

The General Risk taking Questionnaire

How frequent do you normally engage in the following behaviors? Please indicate the most appropriate option for each of the behavioral items." 4-Likert response options include "Never", "Seldom", "Some of the time" and "Most of the time"

1. Binge Drinking	Never	seldom	Some of the time	Most of the time
2. Smoking (Use of tobacco)	Never	seldom	Some of the time	Most of the time
3. Take a shot at a social function (alcohol)	Never	seldom	Some of the time	Most of the time
4. Drive after drinking	Never	seldom	Some of the time	Most of the time
5. Gambling	Never	seldom	Some of the time	Most of the time
6. Ignore traffic signals	Never	seldom	Some of the time	Most of the time
7. Lying	Never	seldom	Some of the time	Most of the time
8. Being late for school or meeting	Never	seldom	Some of the time	Most of the time
9. Play Truant	Never	seldom	Some of the time	Most of the time
10. Make a dash for train doors/ rush to board a departing vehicle	Never	seldom	Some of the time	Most of the time
11. Break a promise	Never	seldom	Some of the time	Most of the time
12. Cheat on tests/ exams	Never	seldom	Some of the time	Most of the time
13. Shoplifting	Never	seldom	Some of the time	Most of the time
14. Steal money or property from others	Never	seldom	Some of the time	Most of the time
15. Illegal drug use	Never	seldom	Some of the time	Most of the time
16. Ride a bicycle with lights off at night	Never	seldom	Some of the time	Most of the time
17. Take diet pills, powders or liquids	Never	seldom	Some of the time	Most of the time

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18. Don’t eat for more than or equal to 24 hours	Never	seldom	Some of the time	Most of the time
19. Vomit or take laxatives	Never	seldom	Some of the time	Most of the time

The locus of control scale

Please choose one of the following statements

1. a. Children get into trouble because their parents punish them too much.

b. The trouble with most children nowadays is that their parents are too easy with them.

2. a. Many of the unhappy things in people's lives are partly due to bad luck.

b. People's misfortunes result from the mistakes they make.

3. a. One of the major reasons why we have wars is because people don't take enough interest in politics.

b. There will always be wars, no matter how hard people try to prevent them.

4. a. In the long run people get the respect they deserve in this world.

b. Unfortunately, an individual's worth often passes unrecognized no matter how hard he tries.

5. a. The idea that teachers are unfair to students is nonsense.

b. Most students don't realize the extent to which their grades are influenced by accidental happenings.

6. a. Without the right breaks one cannot be an effective leader.

b. Capable people who fail to become leaders have not taken advantage of their opportunities.

7. a. No matter how hard you try some people just don't like you.

b. People who can't get others to like them don't understand how to get along with others.

8. a. Heredity plays the major role in determining one's personality.

b. It is one's experiences in life which determine what they're like.

9. a. I have often found that what is going to happen will happen.

b. Trusting to fate has never turned out as well for me as making a decision to take a definite course of action.

10. a. In the case of the well prepared student there is rarely if ever such a thing as an unfair test.

b. Many times exam questions tend to be so unrelated to course work that studying in really useless.

11. a. Becoming a success is a matter of hard work, luck has little or nothing to do with it.

b. Getting a good job depends mainly on being in the right place at the right time.

12. a. The average citizen can have an influence in government decisions.

b. This world is run by the few people in power, and there is not much the little guy can do about it.

13. a. When I make plans, I am almost certain that I can make them work.

b. It is not always wise to plan too far ahead because many things turn out to be a matter of good or bad fortune anyhow.

14. a. There are certain people who are just no good.

b. There is some good in everybody.

15. a. In my case getting what I want has little or nothing to do with luck.

b. Many times we might just as well decide what to do by flipping a coin.

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16. a. Who gets to be the boss often depends on who was lucky enough to be in the right place first.

b. Getting people to do the right thing depends upon ability, luck has little or nothing to do with it.

17. a. As far as world affairs are concerned, most of us are the victims of forces we can neither understand, nor control.

b. By taking an active part in political and social affairs the people can control world events.

18. a. Most people don't realize the extent to which their lives are controlled by accidental happenings.

b. There really is no such thing as "luck."

19. a. One should always be willing to admit mistakes.

b. It is usually best to cover up one's mistakes.

20. a. It is hard to know whether or not a person really likes you.

b. How many friends you have depends upon how nice a person you are.

21. a. In the long run the bad things that happen to us are balanced by the good ones.

b. Most misfortunes are the result of lack of ability, ignorance, laziness, or all three.

22. a. With enough effort we can wipe out political corruption.

b. It is difficult for people to have much control over the things politicians do in office.

23. a. Sometimes I can't understand how teachers arrive at the grades they give.

b. There is a direct connection between how hard 1 study and the grades I get.

24. a. A good leader expects people to decide for themselves what they should do.

b. A good leader makes it clear to everybody what their jobs are.

25. a. Many times I feel that I have little influence over the things that happen to me.

b. It is impossible for me to believe that chance or luck plays an important role in my life.

26. a. People are lonely because they don't try to be friendly.

b. There's not much use in trying too hard to please people, if they like you, they like you.

27. a. There is too much emphasis on athletics in high school.

b. Team sports are an excellent way to build character.

28. a. What happens to me is my own doing.

b. Sometimes I feel that I don't have enough control over the direction my life is taking.

29. a. Most of the time I can't understand why politicians behave the way they do.

b. In the long run the people are responsible for bad government on a national as well as on a local level.

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