Psychopreneur Journal 2025, 9(2): 65-76
ISSN 2598-649X cetak/ ISSN 2598-6503 online

Temporarily-Heightened Self-Esteem and Risk-Taking in Gambling: An Experimental Research

Belicia Griselda Talahaturusun
Universitas Ciputra Surabaya

Amadea Regine Tan
Universitas Ciputra Surabaya

Chairein Christy Limantara*[1]
Universitas Ciputra Surabaya

Velissia Lakaseng
Universitas Ciputra Surabaya

Nathania Amabel Sangjaya
Universitas Ciputra Surabaya

Livia Yuliawati
Universitas Ciputra Surabaya

Putri Ayu Puspieta Wardhani
Universitas Ciputra Surabaya

Audrey Devina Setiawan
Universitas Ciputra Surabaya

Abstract. One of the factors that influence gambling behaviour is self-esteem. Hence, this paper wants to examine the impact of temporarily-heightened self-esteem to risk-taking behaviour in the context of gambling. This research employs a two-group posttest only design with 8 participants in each group who are randomized by means of drawing names out of a box. Participants are asked to place a bet and pick a card to obtain a win/ lose result. Wins experienced by the control group are not predetermined. The experiment group results are predetermined to ensure consecutive wins. Data is collected from the amount of wager placed in each round which is then analysed with Mann-Whitney U Test with p=0.012. Results show a higher level of risk-taking in the experimental group compared to the control group. This research contributes by discovering a new variable responsible in gambling phenomenon which is temporarily-heightened self-esteem.

Keywords: *temporarily-heightened self-esteem, risk-taking, gambling*

Abstrak. Salah satu faktor yang mempengaruhi perilaku berjudi adalah *self-esteem.* Maka dari itu, penelitian ini ingin mengetahui pengaruh dari *self-esteem* yang ditingkatkan secara sementara terhadap perilaku pengambilan resiko dalam konteks berjudi. Penelitian ini menggunakan metode eksperimen *two group post test only*. Setiap grup terdiri dari 8 partisipan yang telah dirandomisasi menggunakan cara mengambil nama secara acak dari kotak. Partisipan diminta untuk memberi taruhan kemudian memilih kartu untuk mendapatkan kemenangan/ kekalahan. Kemenangan yang didapatkan oleh partisipan di kelompok kontrol tidak ditentukan sebelumnya. Pada kelompok eksperimen, kemenangan yang didapatkan partisipan telah ditentukan sebelumnya sehingga pasti mendapatkan kemenangan yang beruntun. Data didapatkan dari jumlah taruhan yang ditempatkan pada setiap ronde yang kemudian dianalisis menggunakan Mann-Whitney U Test dengan hasil p=0.012. Hasil menunjukkan adanya perbedaan perilaku pengambilan resiko yang lebih tinggi daripada kelompok eksperimen dibandingkan dengan kelompok kontrol. Penelitian ini memberikan kontribusi berupa adanya variabel baru yang berpengaruh pada perilaku berjudi, yaitu *temporarily-heightened self-esteem*.

Kata kunci: *temporarily-heightened self-esteem*, *risk-taking,* perjudian

[1] **Korespondensi**: Chairein Christy Limantara. Universitas Ciputra. CitraLand CBD Boulevard, Made, Kecamatan Sambikerep, Surabaya, Jawa Timur 60219. Email: cchristy01@student.ciputra.ac.id

Gambling has become a significant global concern in the field of public health. Over the past two decades, it has increasingly emerged as a problem, especially among teenagers (Frisone, Settineri, Sicari, & Merlo, 2020). In Indonesia, the majority of those involved in gambling, a staggering 97.4%, are categorized as heavily addicted and 70.8% of emerging adulthood have gambled at least once in the year prior (Putri & Fitri, 2022). Gambling activities occur both online and offline, with 12.5% of individuals reporting such activities, posing a potential risk for gambling-related issues (Andrie et al., 2019).

Gambling has become more prevalent with the help of technology. As can be seen from the surge of internet gambling in 2013, which was valued at €6.1 billion. In 2012, online gambling constituted approximately 8-10% of the entire global gambling market, and this proportion seems to be on the rise (Gainsbury, 2015). In a study that employed the PGSI (Problem Gambling Severity Index) to evaluate problem gambling, 25,034 individuals aged 15 to 75 years were surveyed. The findings revealed that among active gamblers, 3.7% were categorized as problem gamblers, and 7.1% were identified as having a moderate risk of gambling-related issues (Calado, Alexandre, & Griffiths, 2016).

Gambling comes with a range of negative impacts. Some of these negative consequences include; (1) foster strong addictive tendencies, which can in turn, result in financial hardships, strained relationships, and an overall decline in their well-being (Gainsbury, 2015), (2) financial setbacks, as individuals may risk amounts surpassing their financial capacity, ultimately leading to indebtedness, bankruptcy, and financial devastation (Meswari & Ritonga, 2023), (3) compulsive gambling is linked to mental health issues, including depression and anxiety. The pressure of losing money and the irresistible urge to keep playing can negatively impact one's mental state and overall well-being (Walker & Sobel, 2016).

Gambling addiction can be a serious issue that can arise during emerging adulthood. This is because emerging adulthood is a transitional period characterized by exploration, significant changes, and increased independence in one's life (Oksanen, Savolainen, Sirola, & Kaakinen, 2018). Emerging adulthood age 18-29 are found to have higher gambling behaviour than other age groups (Jun, Sacco, & Cunningham-Williams, 2019). A report from the sole gambling prevalence in Austria indicated that there is a prevalence of problematic gambling in accordance with the criteria for pathological gambling (according to DSM-IV) in participants aged 14-65 (Calado, Alexandre, & Griffiths, 2016).

Multiple studies regarding self-esteem and financial risk taking have been conducted. These studies have constantly found a positive correlation between self-esteem and financial risk taking (Leon & Mario, 2019; Sekścińska, Jaworska, & Rudzinska-Wojciechowska, 2021). Other studies have also investigated the role of self-esteem on financial risk taking in the context of investment (Leon & Mario, 2019; Sekścińska, Jaworska, & Rudzinska-Wojciechowska, 2021). However, the concept of financial risk taking extends beyond investment which also includes games of chance/gambling, this indicates more areas that need further research (Weber, Blais, & Betz, 2002). In addition, considering the negative impact of gambling behaviour, further research into its relationship with alternating levels of self-esteem during gambling is needed. Specifically, as there is no clear evidence whether gambling behaviour is influenced by general self-esteem or situational self-esteem which includes temporarily changed self-esteem (Bayat, Akbarisomar, Tori, & Salehiniya, 2019; Choi & Kim, 2021). Supporting this fact, there is a finding on

how levels of self-esteem may be temporarily influenced—heightened or lowered—by success or failure in a task, thereby impacting the decision making process regarding the amount of money risked (Sekścińska, Jaworska, and Rudzinska-Wojciechowska, 2021). Despite the need to explore more on temporarily changed self esteem and gambling behaviour, there is still little to no research regarding this topic (Sekścińska, Jaworska, & Rudzinska-Wojciechowska, 2021). To bridge the knowledge gaps mentioned above, this research will contribute by determining the role of temporarily-heightened self-esteem induced by winning experience on gambling behaviour in emerging adulthood using experimental design.

Risk-taking is defined as an individual's inclination to engage in things that involve uncertainty and a potential for unfavorable results (Mishra, Lalumière, & Williams, 2010). This willingness to take risks involves making choices that may result in both positive and negative consequences. In the context of gambling, risk-taking refers to individuals' willingness to participate in activities with a significant degree of uncertainties (Mishra, Lalumière, & Williams, 2010). These activities frequently involve a high probability of financial loss in exchange for a lower chance of achieving substantial gains.

Self-esteem is defined as an individual's perception of themselves, both negative and positive (Rosenberg, 1965). Rosenberg's definition and Self-Esteem Scale are still being used in recent research, proving its relevance in the modern day context (Kielkiewicz, Mathúna, & McLaughlin, 2019; Choi & Kim, 2021). Similarly, Choi and Kim (2021) defines self-esteem as an evaluation of oneself. Self-esteem involves a person's belief in their own abilities to exercise independent judgment and take responsibility for their choices, values, and actions (Branden, 1992). Brown, Dutton and Cook (2001) added that self-esteem also refers to momentary emotional states, in which self-esteem can be temporarily induced (heightened or lowered) by emotion (Branden, 1992). In short, temporarily-heightened self-esteem is the alternating levels of self-esteem an individual experiences induced by momentary emotional state (Sekścińska, Jaworska, and Rudzinska-Wojciechowska, 2021). This research focuses on how temporarily-heightening the level of self-esteem influences risk-taking behaviour, and not how each level of self-esteem (both high and low) influences risk-taking.

In the gambling phenomenon, winning a bet provides gamblers with emotional stimulus in the form of positive feeling (Isen & Patrick, 1983; Branden, 1992; Greenaway, Kalokerinos, Murphy, & McIlroy, 2018), temporarily-heightening their self-esteem. This heightened level of self-esteem makes individuals more confident in their ability to make independent judgement, resulting in more risk-taking decisions in gambling (Gomez-Baya, Mendoza, Gaspar & Gomes, 2018). To further understand the dynamics between these two variables, researchers will conduct an experiment in which the winning experience will be manipulated, to temporarily-heighten self-esteem and observe the effect on their risk-taking decision.

The independent variable of this research is temporarily-heightened self-esteem which is manipulated through a series of wins and losses experienced throughout the experiment. The dependent variable is risky behaviour which is measured through the amount of bet placed in each round. Thus, we hypothesize that the experiment group will experience temporarily-heightened self-esteem in higher risk-taking behaviour in gambling than the control group.

METHOD

Study Design and participants

This study uses a true experiment to place participants into two groups (control and experimental group) to measure the independent variable (temporarily-heightened self-esteem) and examine its effects on the dependent variable (risk-taking behaviour) by giving a treatment to the experimental group (Gribbons & Herman, 1996). The participants involved are undergraduate students from Ciputra

University in Surabaya, selected using accidental sampling. Accidental sampling, which is a non-random selection of participants who meet the research criteria, is used to facilitate access in finding suitable participants (Etikan & Bala, 2017). In addition, accidental sampling also helps in selecting participants in a practical manner even within a large population and can produce sufficiently accurate data to represent the target population. The criteria for participants in this study includes both individuals with and without gambling experience. Ultimately, the researcher identified a total of 16 participants who met the established criteria, comprising 10 males and 6 females.

Before conducting the experiment, the participants completed measures of a self-esteem scale. This was done to distribute individuals with all levels of self-esteem into equal groups, removing the variable of level of self-esteem as a secondary variable and ensuring the homogeneity of both groups. To avoid the inclusion of secondary variable of gambling propensity in this experiment, participants filled out gambling behaviour scale and demographic questionnaire. The results of both the self-esteem and gambling behaviour scale are used to randomize the participants into two equal groups (8 participants in each group) by drawing out names from a box. Hence, removing possibility of differentiating data caused by other variables other than temporarily-heightened self-esteem. Results will be measured based on the risk-taking behaviour in the form of betting amount.

Measure

Self-esteem

The Rosenberg Self-Esteem Scale is a 10-item scale that measures global self-esteem. All items are answered using a 4-point Likert scale format ranging from 4 (strongly agree) to 1 (strongly disagree). Items 2, 5, 6, 8, 9 are reverse scored. A total score was obtained by summing all of the items. This scale is tested using CFA resulting in a Chi-square of 15.18, p-value of 0.58232, RMSEA of 0.000, confirming a good level of internal consistency (Maroqi, 2019). Also, the relevance of the scale can be affirmed as it is used in numerous recent studies (Choi & Kim, 2021; Sekścińska, Jaworska, & Rudzinska-Wojciechowska, 2021).

Gambling behaviour

The Gambling Symptom Assessment Scale (G-SAS) used in this research comprises 12 self-rated items used to identify the severity of gambling symptoms and changes during treatment. A higher score refers to more severe gambling symptoms. This scale has a Cronbach's α of 0.890 which indicates a good internal consistency and reliability of scale. In addition, it has been used in more recent studies which have proven the scale to be valid (Kalkan & Griffiths, 2018; Díaz-Sanahuja, Macarena Paredes-Mealla, Suso-Ribera, García-Palacios, & Juana María Bretón-López, 2023).

Participants' risk-taking behaviour in gambling will be measured based on the difference in their betting amount between rounds.

Procedure

During the experiment procedure, the experimenters will be researchers who will be divided into two roles such as four Person In Charge (PIC) and one moderator. PIC's task is to assist each participant during the game during the placement of bet and card selection process. The moderator's task is to read out the instructions and rules of the game, including announcing the winners and losers.

A day before the experiment, participants are required to fill out the informed consent that includes information regarding the experiment, such as willingness to participate in gambling activity and to give a deposit of Rp 50.000. This deposit is

intended to enhance player engagement and promote actual betting experience rather than just participating. Participants then filled out a Google Form with self-esteem and gambling behaviour scales that are given the day before the experiment. Based on the result of the scales, random assignments are conducted by drawing names out of a box, to divide the participants into 2 equal groups. The experiment is divided into 4 sessions within 2 days, with 4 participants in each session.

Right before conducting the experiment, the participants will receive a briefing regarding the topic of gambling and collecting a deposit of Rp 50,000 from each participant. The instructor will also inform that 2 participants with the lowest amount of game money will not get their deposit money back, while the 2 participants with the highest amount of game money will receive real money based on the remaining amount of game money. To imitate the real gambling experience, participants are allowed to loan more money (a maximum of 100) during the gambling session.

The gambling experience was conducted in separate rooms to avoid possible social influence, with 1 participant and 1 PIC in each room. To prevent operational errors, the PIC will assist by clicking the necessary buttons, the collection of bets, the distribution of game money, and the recording of the results as part of the data collection. Participants received 100 game money as their initial capital. There are a total of 10 rounds, and in each round, participants are required to place an amount of money as a wager. The game involves selecting cards randomly through a website (figma) that are specially designed by researchers. Participants in this game will wager by selecting cards. In each round, participants will choose one of the 12 available cards, with 4 different outcomes; ZONK, 1X, 2X, and 3X. Obtaining a “ZONK” card will result in participants losing their wager, while “1X”, “2X”, and “3X” will result in participants getting back their wager and an additional of the amount wagered multiplied by the outcome.

The win-loss conditions in the experiment group have been predetermined, where participants will receive 8 out of 10 wins in a specified order, regardless of the cards they choose. During rounds 4 and 9, the experiment group will experience loss, as they will receive a "zonk" card. On the other hand, the control group receives no manipulation. The consecutive wins in the experiment group are expected to temporarily-heighten their self-esteem leading to larger bets. After 10 rounds, the participants gathered in the briefing room and received announcements regarding the results of participants with the highest and lowest remaining amount of game money. The instructor will then give a debriefing on the experimental research, the manipulation of the winning condition, and return all deposits to each participant. In addition, it will be clarified that no actual money will be collected and no cash prizes will be awarded.

Data Analysis Technique

The wager data is divided into two main sections in which participants experience 3 and 4 consecutive rounds of wins respectively in each section. As the predetermined losing outcome appears in rounds 4 and 9, the rounds are divided into rounds 1-4 and rounds 5-9. The difference between rounds in each section are calculated (i.e. the difference between wager in round 4 and 1 as well as difference in round 9 and 5). This is done to distinguish the difference in the amount before experiencing subsequent wins and after experiencing subsequent wins. The results are then analysed with the help of the JASP software. An assumption check is conducted prior to the hypothesis testing using both normality test and homogeneity test. Both of these tests will check the distribution of participants and homogeneity of the data. Mann-Whitney U

test will be used as the non-parametric hypothesis testing.

RESULTS AND DISCUSSION

Table 1. Participants Demographic

Characteristics	Categories	n	%
Age	18	2	12.50%
	20	7	43.75%
	21	5	31.25%
	22	2	12.50%
Gender	Male	6	37.50%
	Female	10	62.50%
Domicile	Surabaya	16	100.00%
Previous betting experience	Present	7	43.75%
	Absent	9	56.25%
Level of self-esteem	Extremely low	1	6.25%
	Low	5	31.25%
	Moderate	6	37.5%
	High	4	25%
	Extremely high	0	0%
Level of gambling symptom	Extremely low	13	81.25%
	Low	3	18.75%
	Moderate	0	0%
	High	0	0%
	Extremely high	0	0%

Table 1 shows the demographics of participants. Majority of participants are aged 20 and 21 years old, comprising more than 50% of the total participants. There are more participants without a previous betting experience (56.25%). Levels of self-esteem were found to be in the “low”, “moderate”, and “extremely high” categories with 31.25%, 37.5%, and 25% respectively while 6.25% is in the “extremely low” category. Levels of gambling symptoms only occupy the “extremely low” and “low” categories with 81.25% and 18.75% respectively.

Table 2. Test of Normality (Shapiro-Wilk)

	Group	W	p
Difference between Rounds 4 and 1	Experiment	0.771	0.014
Difference between Rounds 9 and 5	Experiment	0.820	0.046

Normality test is conducted using Shapiro-Wilk test, analysing the data from the experiment group. As can be seen in table 2 the data in “difference between rounds 9 and 5” for the experimental group has a p-value of 0.046 and W=0.782 which shows that data is not normally distributed.

Table 3. Test of Equality of Variances (Levene’s)

	F	df_1	df_2	p
Difference between Rounds 4 and 1	0.091	1	14	0.768
Difference between Rounds 9 and 5	6.077	1	14	0.027

Homogeneity of the experiment group’s data is tested using Levene’s test as can be seen in table 3. Results show that data in “difference between rounds 4 and 1" is homogenous (p=0.768) while data in “difference between rounds 9 and 5” is not homogenous (p=0.027).

Table 4. Independent Samples T-Test (Mann-Whitney U Test) Experiment Group

					95% CI for Effect Size	
	W	**p**	**Rank biserial correlation**	**SE Effect Size**	**Lower**	**Upper**
Difference between Rounds 4 and 1	39.500	0.457	0.234	0.289	-0.331	0.676
Difference between Rounds 9 and 5	56.000	0.012	0.750	0.289	0.371	0.915

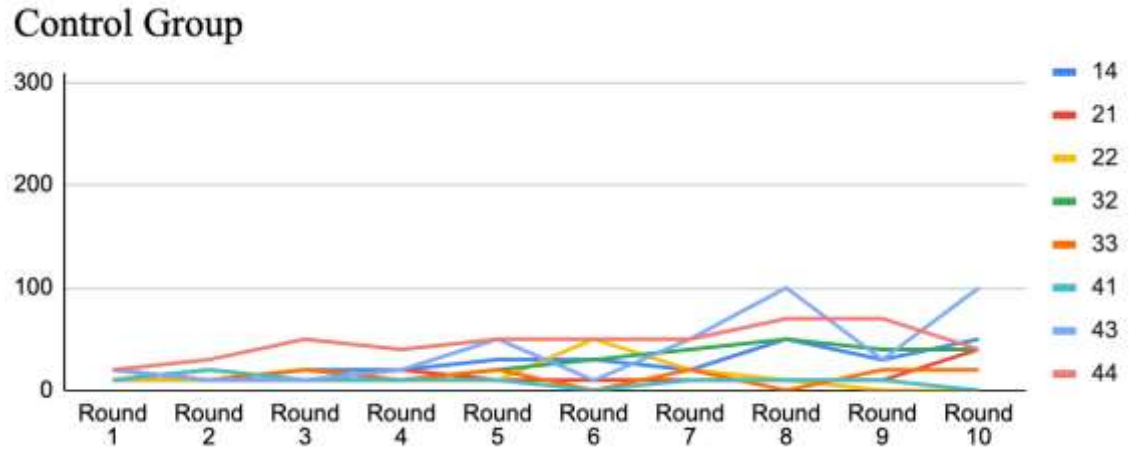
Both homogeneity and normality assumptions are not met. Hence, the non-parametric Mann-Whitney U Test is used to test the hypothesis. As shown in table 4, results show that the hypothesis is accepted with p=0.012 and with rank biserial correlation of 0.75.

Table 5. Group Descriptives

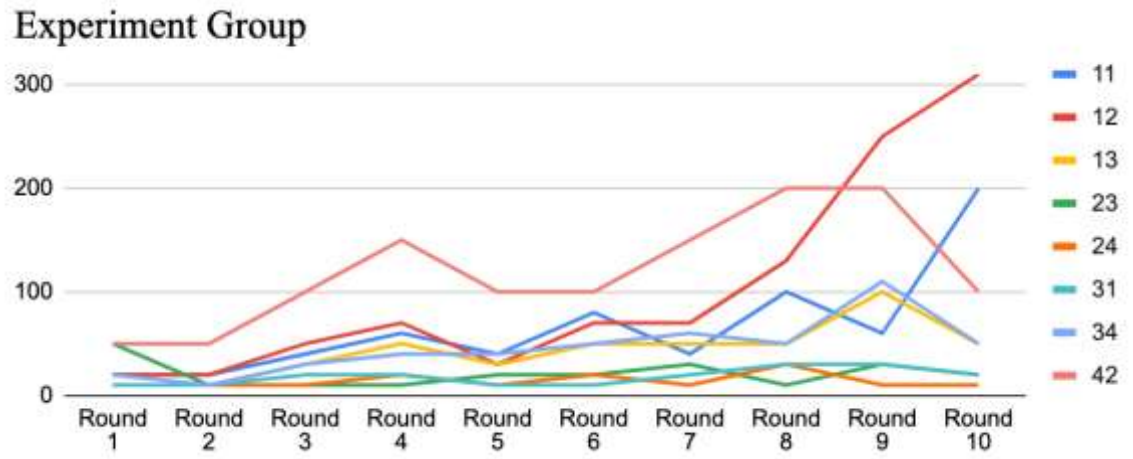
	Group	**N**	**Mean**	**SD**	**SE**	**Coefficient of variation**
Difference between Rounds 4 and 1	Experiment	8	2.250	4.590	1.623	2.040
	Control	8	1.625	0.018	1.690	2.941
Difference between Rounds 9 and 5	Experiment	8	63.750	72.297	25.561	1.134
	Control	8	1.250	13.562	4.795	10.850

Descriptive data in table 5 shows that the experimental group has an overall higher mean (2.25 and 63.750) with SD=4.59 and SD=72.297, compared to control groups, with a mean of 1.625 and 1.25, as well as SD=4.779 and SD=13.562.

Graphic 1. Control Group Wager Graphic



Graphic 2. Experiment Group Wager Graphic



Graphic 1 and 2 shows the betting amount of all participants in each round. It can be seen that overall, the control group waged a comparatively stable wager compared to the experimental group. The experiment group is seen to have a higher betting amount on the overall. Through graphic 2, it can also be seen that the wager amount kept rising from round 1 to 4 and from round 5 to 9, and dropped significantly on round 5 and 10 after experiencing losing.

Consistent with our hypothesis, individuals who experienced temporarily-heightened self-esteem become more engaged in gambling activities. This study found that there are differences between the group that did not experience temporarily-heightened self-esteem through winning manipulation and those who did. The results indicated that individuals who experienced a boost in self-esteem due to winning were more likely to be involved in gambling behaviour. Participants fully understood that the card picking process has nothing to do with competence or skills, but are willing to engage in more risk-taking activities after experiencing consequent wins. This indicates that they are more confident in their ability, even without real evidence of it during the gambling process. This explanation aligns with the explanation that self-esteem is also related to the feeling of pride (Branden, 1992), in which temporarily-heightened self-esteem happened because of accomplishment in the form of winning the bet. Winning a few rounds consecutively is perceived as the proof of their decision making ability, boosting their self-esteem even further to engage in more risk-taking behaviour. Several other research have also reported similar outcomes, indicating that winning a wager can temporarily-heightened one's self-esteem and can result in increased involvement in gambling (McGurrin, 1992; Turner, Littman-Sharp, Zangeneh, & Spence, 2006; Sleczka, Braun-Michl, & Kraus, 2020; Sekścińska, Jaworska, & Rudzinska-Wojciechowska, 2021).

To explain the limited acceptance of our hypothesis in rounds 4 and 1, we examined prior experimental research that utilized wins to enhance gambling behaviour. Prior studies involved more gambling rounds to ensure a strong winning experience, which then in turn affects emotional states (Cummins, Nadorff, & Kelly, 2009). Previous research has discovered that positive emotions have a minor impact on one's likelihood in getting involved with gambling. Rather, it is the experience of winning that has a significant influence on temporarily-heightened self-esteem, resulting in greater involvement in gambling activities. Our study found that there was no significant difference in the data between round 1 and round 4. This suggests that participants lack a strong initial winning experience. Although positive feelings temporarily-heightened

self-esteem, they were found as weaker mediators compared to winning experiences (Cummins, Nadorff, & Kelly, 2009). This aligns with Sekscinska's study, which involved temporarily-heightening self-esteem by recalling past prideful moments (Sekścińska, Jaworska, & Rudzinska-Wojciechowska, 2021). In summary, participants had not acquired a sufficiently strong winning experience at the beginning of the rounds, but it gradually strengthened as the rounds continued. That is why, the difference between round 5 and round 9 is more significant compared to the data found between round 1 and round 4.

CONCLUSION

This experimental research found that temporarily raising an individual's self-esteem by giving them consecutive wins, increases their risk-taking behaviour. This research has also discovered a significant finding: while a person's self-esteem can be influenced by positive emotion, the experience of winning itself is the most influential factor in determining temporarily-heightened self-esteem that increases risk-taking behaviour. Therefore, this research contributes significantly to the field by providing a comprehensive exploration of how temporarily-heightened self-esteem can be induced by positive emotion and winning experience resulting from a winning streak. This understanding enables gamblers to adopt a more cautious approach to their gambling activity, ensuring that their decisions are not solely driven by momentary emotions or state but are guided by a more objective judgment.

Limitations in this research concludes the possibility of differing values of money among participants. In this experiment, it is explained that those obtaining the lowest final score will lose a deposit of Rp50.000. The value of Rp50.000 may have different meanings for each individual, leading to some participants being very cautious while playing and others being indifferent to the potential loss of that amount. Then, in the implementation process, the procedures used diverge from real-world gambling conditions. Researchers established winnings with a percentage that is too high, a scenario quite different from reality where individuals find it challenging to achieve such high winning percentages in gambling. In addition, this research provides a total of 10 rounds, which proved to be too short for participants to internalize the winning experience. This results in a slight hindrance to see a well-established pattern in the data.

Based on these limitations, there are a few recommendations for future researchers. Before conducting similar research, researchers can gather data on the income and financial sources of participants, as this can influence the value of their money. Regarding the procedure, researchers can create circumstances that are more similar to real-world gambling conditions by reducing the gambling winning rates in each round so that the results obtained from the study can be more accurate. Future research should also incorporate more rounds into the experiment, in order to give a more realistic gambling experience to participants and provide researchers with more data.

As can be seen in this research, repetitive wins can have an impact on temporarily-heightened self-esteem. One significant factor is the positive emotions felt by each player when they win. Although we acknowledge the presence of emotional factors in our study, they were not directly measured or observed throughout the experiment. Further research needs to delve further into this to gain greater clarity regarding the research showing that winning experiences can increase a person's desire to gamble.

Through this research, we further have some recommendations for educational institutions. We discovered that the

experience of winning might encourage gambling behavior and lead to higher amounts of money being bet. This can lead to a tendency to continue gambling with increasing amounts. It should be noted that this winning experience was made possible through manipulation rather than the gamblers' own abilities. Thus, educational institutions can play a role by providing psychoeducation on preventing gambling addiction and offering treatment for those already addicted.

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