

Loot boxes and gambling: Similarities in psychophysiological arousal

What this research is about

Loot boxes are items in video games that can be purchased with real money or earned through gameplay. They contain randomized rewards, and people do not know which item they will get prior to opening a loot box. Some studies have shown that buying and opening loot boxes is related to increased risk of experiencing gambling problems. Features such as randomized rewards have led some researchers to highlight that loot boxes and gambling are alike.

Few studies have looked at the potential similarities in psychophysiological arousal between loot boxes and gambling. Some research has shown that markers like heart rate, respiratory rate, and electrodermal activity are elevated while people are gambling. Electrodermal activity refers to the change in the electrical properties of human skin. However, it is unclear whether these markers are similarly increased while people are opening loot boxes.

In this study, the researchers looked at psychophysiological responses while opening a loot box or spinning a simulated slot machine among people who gamble, people who use loot boxes, and people who engage in neither. They also looked at potential differences in arousal produced by loot box opening and gambling between the three groups.

What the researchers did

The researchers recruited 40 adults living in Spain for this study. Participants were grouped as people who had gambled but not opened or bought loot boxes (14), people who had opened or bought loot boxes but not gambled (13), and people who had neither opened or purchased loot boxes nor gambled.

What you need to know

Loot boxes are like gambling in that they can be purchased with real money and contain randomized rewards. In this study, the researchers looked at whether 40 adults who gambled, used loot boxes, or neither gambled nor used loot boxes showed similar psychophysiological responses to opening a loot box and gambling. Participants' electrodermal activity, heart rate, and respiratory rate were measured while they opened a loot box and while they spun a simulated slot machine.

Among people who gambled or used loot boxes, electrodermal activity was elevated while opening a loot box and spinning the slot machine. Electrodermal activity was elevated only while spinning the slot machine among people who neither gambled nor used loot boxes. Heart rate and respiratory rate generally did not differ substantially between the experimental phases or participant groups. The findings provide evidence that loot boxes and gambling are alike as both activities similarly increase psychophysiological arousal. These findings can inform regulations surrounding the randomized reward mechanics that are present in both loot boxes and gambling.

Participants completed an online survey that asked about their demographic characteristics and gambling experiences. They then completed an experimental task that first involved having electrodes attached to their hand and chest. A 30-second initial measurement of their heart rate, respiration rate, and electrodermal activity was taken (baseline). After this, participants were instructed to open a loot box in the FIFA 2023 video game, which took eight seconds. During the loot box opening, the electrodes continued to measure their

psychophysiological responses. After a one-minute rest period, another 30-second initial measurement of their heart rate, respiratory rate, and electrodermal activity was taken (post-baseline).

The same procedure was repeated, but this time involved spinning a simulated slot machine instead of opening a loot box.

What the researchers found

On average, participants were about 20.47 years of age. Participants included 19 men and 21 women. Among the group of people who gambled, the most popular form of gambling was lotteries and scratch cards. Most participants in this group played video games, and three had played FIFA before. But none had opened or bought loot boxes. Among the group of people who opened or bought lot boxes, all reported that they had opened loot boxes in FIFA before this study. Seven also reported opening free loot boxes in other games, and one said they had spent real money on loot boxes.

Among all participants, electrodermal activity was elevated while opening a loot box compared to baseline and post-baseline. Within the specific groups, increased electrodermal activity during loot box opening compared to baseline was seen among people who gambled and people who used loot boxes, but not among people who neither gambled nor used loot boxes. Heart rate and respiration rate did not differ between the phases of the loot box opening among all participants and within the specific groups.

Among all participants, electrodermal activity and heart rate were elevated while spinning a simulated slot machine compared to baseline and post-baseline. Within the specific groups, increased electrodermal activity during simulated slot machine spinning compared to baseline was seen among people who gambled, people who used loot boxes, and people who neither gambled nor used loot boxes. Heart rate and respiratory rate generally did not differ between the phases of the gambling task within any specific groups.

How you can use this research

The findings suggest that gambling and opening loot boxes lead to similar increases in psychophysiological arousal, especially electrodermal activity. This study suggests that policy makers should consider further regulation of randomized reward mechanics present in both loot boxes and gambling, given their risks.

About the researchers

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