A Framework for "Gacha Psychoeducation" – Encouraging More Positive Interactions Between Young People and Games

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Introduction

The anticipation and rush that comes from wishing for a character in *Genshin Impact* (miHoYo, 2020) is a feeling many gamers would be familiar with, as would the disappointment of receiving a lower star character whose constellations are already maxed out. Lootboxes and gacha systems have become a dominant mechanism in games used by children and adolescents, with 77.0% of the 100 highest-grossing iPhone games containing loot boxes in June 2021 (Xiao, Henderson & Newall, 2022). It is said to have originated from the Japanese gashapon vending machines, and then rapidly diffused into East Asian mobile titles and subsequently into the West (Tang, Yiu, Mi & Lai, 2025). Structurally, they operate via variable-ratio reinforcement schedules, whereby a player pays real (or functionally real) money in exchange for a randomised outcome; in the case of *Genshin Impact* (miHoYo, 2020), the variable is a maximum of 90 pulls for a 5-star, with grindable Primogem currency. Variable-ratio reinforcement underpins slot machines and strongly triggers reward and anticipation circuits in the brain (Belmar & Subramanian, 2025). Younger players are particularly vulnerable because developmental immaturity impairs probability reasoning, future discounting, and inhibitory control, producing gambling-like reinforcement in games without children recognising it as gambling (Belmar & Subramanian, 2025).

Discrepancies in identification across studies suggest that prevalence may be underestimated due to hidden or bundled loot boxes and methodological differences (Belmar & Subramanian, 2025). This prevalence means that children encounter gambling-like mechanisms in games they already play. Beyond structural reinforcement, gacha systems operate through 'affective embedding': aesthetic,

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parasocial, and identity-based attachments to characters and game-worlds that alter cost-benefit cognition (Woods, 2024). Players can often spend because it feels like "taking care of the character" or "showing loyalty," not because they rationally evaluate probabilities or cost. Examples of this in *Genshin Impact* (miHoYo, 2020) can be observed through the 'story' functions with characters, as well as the through letters received by obtainable characters in the player's mailbox. 'This relational mis-labelling is especially relevant in child mental-health populations, where attachment needs and emotional regulation are often therapeutic targets (Kirkbride, Anglin, Colman, Dykxhoorn, Patalay, 2024).

Lootbox purchase is associated with elevated odds of problem gambling independently of other gambling activity in countries such as Australia (12–17 years) (Kristiansen & Severin, 2020), and Japan (~14 years) (Ide, Nakanishi, Yamasaki, Ikeda, Ando, Hiraiwa-Hasegawa et al., 2021). The "pay-to-win" model in gacha games is suggested to exploit psychological vulnerabilities, such as the fear of missing out, which can subsequently escalate the risk of diminished self-control, financial harm, and risk of problem gambling (Tang, Yiu, Mi & Lai, 2025). A Frontiers study in an Italian adolescent sample found that lootbox engagement predicted both problem gaming and gambling before and during COVID-19 lockdown (Primi et al., 2022). Together, these studies indicate that lootbox risk intersects gambling, gaming disorder, emotion-regulation, and developmental neurocognition, rather than being merely a literacy problem. CAMHS populations share relevant vulnerabilities which include impulsivity and sensation seeking, in addition to the fact that younger patients generically are more likely to exhibit impulsive behaviours and to find risk-taking appealing (Ide, Nakanishi, Yamasaki, Ikeda, Ando, Hiraiwa-Hasegawa et al., 2021; Primi et al., 2022). Psychoeducation targeting reinforcement mechanics and relational binding can therefore have a key role to play in building player insight into such mechanics, reducing possible gambling and mental-health related risk, and encouraging a more positive relationship with such games.

Methods

A two-phase approach is proposed: Phase 1 delivers psychoeducation to university anime and gaming societies (a low-risk, developmentally mature analogue sample) with pre/post surveys using Likert scales in order to measure effectiveness. Content includes an initial exercise using drama therapy techniques, then content on the history of gacha games and loot boxes, dopamine and reward anticipation, variable-ratio reinforcement, in-game currency value distortion, social comparison, parasocial relationships, and affective embedding (Brooks & Clark, 2019; Lakić, Bernik, Čep, 2022; Risco, Lee, Mills, 2025; Tang, Yiu, Mi & Lai, 2025)9,10,11]. The introductory exercise utilises the dramatherapy technique of reenactment, embodiment and mirroring, by playing a video extract of a wishing animation (Son & Shiozawa, 2025). It will then be followed by a Menti quiz, probing reflection on feelings and experiences. Pre and post measures will be used to assess awareness of mechanisms, subjective 'ability to stop', beliefs about gacha game fairness, and relational attachment to characters. These will then be evaluated using appropriate statistical difference tests.

Phase 2 adapts this educational content for CAMHS patients, combining dramatherapy methodology with findings on key topic areas, to tailor the psychoeducation. Gacha rolls are performative events - the 'reveal', the dramatic beat, and rarity promise - so dramatherapy provides an embodied metaphor and non-shaming reflective container. Phase 2 is co-designed with CAMHS clinicians to tailor materials to developmental

stage and clinical vulnerabilities. Similarly to Phase 1, we will be looking to use pre- and post- surveys, if possible, to evaluate the effectiveness of the session on awareness.

Results (achieved/anticipated)

For Phase 1, we delivered an integrated psychoeducation session to a group of university students, in collaboration with a gaming and an anime and manga society. The sample characteristics of the cohort were young adults ages 18-25 years, of male, female and other genders.

Due to technical faults, we were unable to obtain pre-session survey data using a Likert scale and therefore used a dichotomous scale. The feedback from the introductory engagement exercise revealed that students associated wishing with vulnerable emotions such as 'excited', 'skeptical', 'curious', 'dread', and 'scared'. Just under half of the students expressed spending their in-game currency as soon as possible, rather than saving it.

Feedback from the session shows that majority of students feel they can engage positively in the chance-based aspects of their games and stop themselves from playing the games. All students reported being able to identify when the games are no longer fun anymore. The section on variable-ratio reinforcement was well received, with an 80% increase in awareness.

These results are hoped to be used in the further development of a psychoeducation programme for Phase 2, deepening areas of understanding for a more vulnerable and younger audience.

Discussion

Loot boxes are gambling-like mechanics without social signals of gambling. Children cannot legally enter casinos, but a casino contingency can enter a child's bedroom via content drops, wishes, or gacha banners. Evidence shows high prevalence, consistent associations with gambling and problem gaming, psychological distress, and affective embedding that bypasses rational cost–benefit evaluation (Risco, Lee, Mills, 2025; Xiao, Henderson & Newall, 2022; Zendle & Cairns, 2018). Prevalence data from UK studies highlight that even games previously considered "safe" may contain hidden loot boxes (Xiao, Henderson & Newall, 2022).

The results from our phase 1 showed that the students reported a good understanding and relationship with gacha games and lootboxes, yet still had a percentage of students feeling that they had to roll as soon as they had enough in-game currency. Despite most of our sample reporting control over their gaming, they continued to associate vulnerable emotions with rolling. These findings highlight that self-reported insight into the chance-based nature of these games may not by themselves be indicative of how susceptible players are to their emotional impact. Dramatherapy techniques were noted as being particularly useful in developing their insight into potentially addictive inclinations and encouraging reflections on these despite their previous positive self-report. We believe this demonstrates the value of psychoeducation in healthy populations, and its potential role in earlier recognition of risk and self-regulation

before addictive inclinations solidify. However, further research is needed to identify which outcome measures may be more robust in identifying how this also relates to vulnerability to gaming-related risks in these games, which CAMHS populations may be disproportionately vulnerable to.

Limitations include Phase 1's non-clinical, self-report sample; causality uncertainty due to cross-sectional designs; a difference scale used with different data sets and the UK-specific CAMHS trials yet to be conducted. Nonetheless, the convergence of neurobiological, epidemiological, and cultural evidence justifies this preventative intervention. Future research should examine longitudinal outcomes of psychoeducation in clinical populations, the impact of parasocial and affective embedding, and interactions with comorbid mental health conditions.

BIBLIOGRAPHY

Citations and References

Belmar CS, Subramanian N. Gaming's hidden gamble: are we betting more than we realise? *Irish Journal of Psychological Medicine.* 2025 Oct 27;1–3.

Brooks GA, Clark L. Associations between loot box use, problematic gaming and gambling, and gambling-related cognitions. *Addictive Behaviors*. 2019 Sep;96(96):26–34.

Ide S, Nakanishi M, Yamasaki S, Ikeda K, Ando S, Hiraiwa-Hasegawa M, et al. Adolescent Problem Gaming and Loot Box Purchasing in Video Games: Cross-sectional Observational Study Using Population-Based Cohort Data. *JMIR Serious Games.* 2021 Feb 9;9(1):e23886.

Kirkbride JB, Anglin DM, Colman I, Dykxhoorn J, Jones PB, Patalay P, et al. The social determinants of mental health and disorder: Evidence, prevention and recommendations. *World Psychiatry : Official Journal of the World Psychiatric Association (WPA) [Internet].* 2024;23(1):58–90.

Kristiansen S, Severin MC. Loot box engagement and problem gambling among adolescent gamers: Findings from a national survey. *Addictive Behaviors.* 2020 Apr;103:106254.

Lakić N, Bernik A, Čep A. Addiction and Spending in Gacha Games. *Information [Internet].* 2023 Jul 13;14(7):399. Available from: https://www.mdpi.com/2078-2489/14/7/399

miHoYo, 2020, *Genshin Impact*, Android/iOS/PS5/Xbox, China: miHoYo, Global: HoYoverse.

Primi C, et al. Loot boxes use, video gaming, and gambling in adolescents: Path analysis before/during COVID-19 lockdown. *Front Psychol*. 2022;13:1009129.

Risco S, Lee U, Mills DJ. Betting on Connection: How Parasocial Relationships in Video Games Amplify the Consequences of In-Game Gambling [Internet]. *Sciety*. 2025 [cited 2026 Jan 28]. Available from: https://sciety.org/articles/activity/10.31234/osf.io/df9gr_v2

Son D, Shiozawa M. Witnessing, Embodying, and Connecting: A Phenomenological Study of Playback Theatre. *Cureus*. 2025 Oct 13;17(10):e94507. Doi: 10.7759/cureus.94507. PMID: 41246571; PMCID: PMC12611634.

Tang Y, Yiu R, Mi E, Lai W. How gacha gaming and life quality shape problem gambling risk: insights from a cross-sectional study using Hong Kong-based online survey of young adults. *Frontiers in Psychiatry.* 2025 Sep 22;16.

Woods O. The affective embeddings of gacha games. *New Media & Society*. 2024;26(2):823–38.

Xiao LY, Henderson LL, Newall PW. Loot boxes are more prevalent in United Kingdom video games than previously considered. *Addiction*. 2022;117(9):2553–5.

Zendle D, Cairns P. Video game loot boxes are linked to problem gambling. *R Soc Open Sci*. 2018;5(3):1711.

BIO

Anjuman Ali has a background in Medicine and in Biomedical Science, and is currently working as a Wellbeing Coordinator. Having grown up on anime and gaming (particularly in Genshin at this moment), she sought further research in gacha and consequently loot boxes, exploring their relevance in vulnerable groups.

Dr Marcus P.J. Tan (陈鹏杰) is a consultant child and adolescent psychiatrist at South London and Maudsley NHS Foundation Trust, where he also trained. He holds a position as Honorary Senior Clinical Lecturer at King's College London, and leads teaching to medical students on Child psychiatry. He is also proud to be a trustee for the charity Gaming the Mind, working with a range of community organisations to combat stigma against mental health in video games. He also has a special interest in gacha games, as well as the topic of prolonged social isolation (Hikikomori). He is also an avid Gacha gamer and a fan of Honkai Star Rail!