Becoming a Healthy Player: Exploring Teen Esports Players' Perspectives on Mental Well-Being through Participatory Design

Yeonhee Cho
University of Washington
Seattle, Washington, USA
yhcho@uw.edu

Daeun Hwang
University of Washington
Seattle, Washington, USA
hdaeun@uw.edu

Ally Lam
University of Washington
Seattle, Washington, USA
ally72@uw.edu

Jin Ha Lee
University of Washington
Seattle, Washington, USA
jinhalee@uw.edu

Jason C. Yip
University of Washington
Seattle, Washington, USA
jcyip@uw.edu

Abstract

Teen participation in esports is rapidly expanding, raising concerns about how competitive gaming shapes adolescent mental well-being. Existing mental well-being initiatives often adopt adult-centered approaches that overlook teenagers' lived realities. This study explores mental well-being from the perspective of teen esports players. Through nine participatory design sessions with 34 participants, including adolescent players, coaches, and program coordinators, we examined how teens conceptualize a "healthy player" and sustain mental well-being in gaming. Findings emphasize three key insights: (1) for teens, being "healthy" means winning together, where well-being is tied to collective outcomes and social responsibility; (2) most stressors stem from esports environments beyond their control, underscoring the need for emotional resilience; and (3) teens favor simple, everyday coping strategies, such as taking breaks, reframing losses, adjusting play environments, and drawing on peer encouragement, over formal programs. These patterns resonate with Cognitive Behavioral Theory, suggesting that cycles of thought, emotion, and behavior underpin resilience. We argue for youth-centered, culturally relevant mental well-being strategies and micro-interventions embedded in the daily practices of adolescent esports.

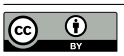
CCS Concepts

• **Human-centered computing → User studies**.

Keywords

Adolescents, Esports, Mental Well-being, Participatory Design, Gaming Culture

ACM Reference Format:
Yeonhee Cho, Daeun Hwang, Ally Lam, Jin Ha Lee, and Jason C. Yip. 2026. Becoming a Healthy Player: Exploring Teen Esports Players' Perspectives on Mental Well-Being through Participatory Design. In *Proceedings of the 2026 CHI Conference on Human Factors in Computing Systems (CHI '26), April 13–17, 2026, Barcelona, Spain.* ACM, New York, NY, USA, 19 pages. https://doi.org/10.1145/3772318.3791938



CHI '26, Barcelona, Spain

ACM ISBN 979-8-4007-2278-3/2026/04
https://doi.org/10.1145/3772318.3791938

1 Introduction

Teen participation in esports has grown rapidly in recent years, leading to an expansion of youth-oriented esports leagues, camps, and even educational programs. Reflecting this trend, institutional support for youth esports has also expanded significantly. Since 2018, when the National Federation of State High School Associations (NFHS) officially recognized esports as a high school sport, more than 8,600 schools have launched competitive gaming teams [28]. Beyond schools, nonprofit organizations have played a pivotal role in growing the esports ecosystem. As of 2024, the North America Scholastic Esports Federation (NASEF), an organization committed to using esports for education and youth development, supports over 3,500 high school clubs across all 50 U.S. states, with additional participation in more than 70 countries [30]. Together, these developments underscore the rapid rise and growing legitimacy of esports as a central part of youth culture and learning.

As esports becomes increasingly mainstream among young people, concerns about its impact on their physical and psychological well-being have also intensified. Researchers and educators have raised alarms over issues such as prolonged screen time, irregular sleep patterns, and the psychological pressures associated with competitive gaming [18, 60]. Importantly, esports is not merely a form of entertainment; it is an emotionally charged, socially dynamic environment. For teenagers in particular, team-based real-time competition often creates unique stressors, including fear of losing, letting teammates down, conflicts during matches, and fatigue [55]. These are often exacerbated by experiences of "tilt", emotional breakdowns triggered by in-game setbacks or peer interactions [72]. Many of these stressors come from factors beyond the individual's control, including peer dynamics, performance expectations, and the unpredictability of the game environment.

In response to these challenges, a range of mental health and wellness resources have emerged to support the gaming community. Digital tools like Headspace and What's Up provide guided mindfulness practices, while platforms such as Twitch Cares and the Crisis Text Line offer emotional support channels [65]. Notably, in 2022, the professional esports team Cloud9 partnered with Kaiser Permanente to launch Presence of Mind, a mental health initiative that trained game moderators to recognize signs of emotional distress and support at-risk players [12].

While programs aimed at promoting mental well-being in esports represent an important step forward, their effectiveness for

teenagers remains limited. Adult-centric, top-down approaches that overlook the lived realities and social dynamics of youth gamers drive many initiatives [2]. In particular, mental well-being strategies often focus on managing risks or symptoms rather than engaging with the broader emotional and social ecosystem of play. As the Connected Learning Alliance notes, youth leadership, peer-to-peer support, and everyday practices of emotional care are rarely considered in the design of well-being interventions, even when these tools are meant for youth [2]. This deficit view of teens tends to marginalize teen perspectives, reinforcing a disconnect between official interventions and what young players actually need or use. In addition, many programs prioritize elite or professional players, leaving everyday teen gamers without meaningful, culturally relevant resources for managing their mental well-being within gaming communities.

To address this gap, we explore mental well-being in esports from the perspective of teenage players themselves. This study adopts a participatory design (PD) approach to center youth voices [76], treating teenagers not as passive subjects but as active co-creators of their own learning and mental well-being environments [71]. PD also fostered a peer-to-peer context where participants could create, share, and reflect together [76]. By engaging teens in co-creation, we generated insights grounded in their everyday realities and cultural practices as esports players. We guide our research with the following questions:

(1) How do teenage esports players understand and express mental well-being through participatory design?
(2) What stressors affecting their well-being do teenage esports players identify through participatory design?
(3) What coping strategies do teenage esports players suggest to support their mental well-being through participatory design?

This study makes three primary contributions. First, from a methodological standpoint, it demonstrates the value of participatory design in empowering youth agency and surfacing nuanced insights that traditional methods may overlook. Second, from a design perspective, it provides actionable guidance for gaming coaches and educators on creating mental well-being interventions grounded in the lived experiences of teen gamers. Third, from an educational and social standpoint, it fills a critical gap in the esports literature by examining overlooked mental well-being dimensions, such as sleep, peer pressure, emotional resilience, and community belonging, through the lens of teenage participants themselves.

2 Literature Review

2.1 Understanding Mental Well-Being in the Context of Esports

Esports differs fundamentally from traditional sports in ways that reshape mental well-being challenges. Competitive gaming demands prolonged screen time, sustained cognitive load, rapid decision-making, and constant adaptation to dynamic digital environments [15, 36]. Unlike many traditional sports, these competitions often take place in mediated online spaces where coordination with teammates, strategic thinking, and emotional regulation occur in real time [41]. Esports further amplifies these pressures through its socially networked structure, where in-game actions, communication, and performance outcomes are often shared and discussed within peer groups [7, 29].

In this context, mental well-being is more than the absence of distress; it encompasses a player's ability to remain motivated, emotionally balanced, socially connected, and resilient in a high-pressure environment [21]. Drawing from the World Health Organization (WHO)'s definition of mental health as "a state of mental well-being that enables people to cope with the stresses of life, realize their abilities, learn well and work well, and contribute to their community" [51], this study conceptualizes mental health as a foundation for everyday functioning and social participation. While this paper focuses on mental well-being, we distinguish it from wellness, which is often defined more broadly as a multidimensional lifestyle state, including sleep, nutrition, physical health, and daily routines [27, 48]. In this paper, wellness refers to general health-promoting behaviors across one's whole life, whereas mental well-being in this study specifically concerns adolescents' emotional regulation, relational stability, and psychological functioning within competitive esports contexts. Ultimately, we aim to focus on the psychological and social dimensions most relevant to teen esports players.

In psychology, Cognitive Behavioral Theory (CBT) offers one useful lens for understanding how the interaction of thoughts, emotions, and behaviors shape mental well-being [37]. CBT has been widely applied in adolescent mental health research to explain how distorted appraisals can intensify stress, while cognitive reframing and adaptive behaviors support resilience [38]. Although CBT has not been systematically applied to esports, its emphasis on emotion regulation and behavioral coping provides a foundation for interpreting how youth navigate the pressures of competitive gaming.

Moreover, adolescence is a developmental stage marked by heightened sensitivity to social evaluation and peer approval [64]. When combined with the performance-driven and socially visible nature of esports, these sensitivities can intensify both the rewards and the challenges of competitive play [54]. Moments of "tilt" which are intense frustration and emotional loss of control after setbacks can disrupt concentration, diminish self-confidence, and strain peer relationships [72]. Such experiences persist within a broader ecosystem of competitive play, where peer commentary, online toxicity, and team dynamics continually influence how players see themselves and their abilities [43, 78]. For adolescent players, these influences intertwine with identity formation, peer affiliation, and the pursuit of achievement [64].

Despite these unique developmental and contextual factors, there is limited research on mental well-being in youth esports. Most studies on gaming and mental health focus on risks such as problematic use or addiction [44], while giving far less attention to positive aspects like resilience, flourishing, and belonging. Yet for adolescents, whose social and emotional needs differ from adults [9], these positive dimensions are especially important for development. Without approaches that highlight strengths and supportive conditions, interventions may miss how teenagers actually experience play and growth [46]. A more nuanced understanding of mental well-being in this space is therefore essential, not only to reduce risks but also to help young players thrive.

2.2 Teenage Esports Players' Perceptions of Mental Well-Being

Teenage esports players often operate under intense performance and training pressures, which research links to increased stress and reduced well-being. For instance, adolescents who engage in extended daily gaming for competitive purposes report notably lower levels of psychological well-being [40]. While this does not necessarily indicate a conscious devaluation of emotional health, this phenomenon, coupled with limited access to mental health support, suggests that emotional well-being often becomes a lower priority, overshadowed by the drive for performance [54].

Emerging work also suggests that many youth esports players tend to conceptualize mental well-being as an individual responsibility rather than a collective or systemic issue [20]. Research in scholastic and youth esports environments shows that stress, burnout, and social anxiety are often products of environmental pressures [62], such as irregular training schedules, volatile team dynamics, and performance demands [43, 54]. At the same time, studies in adolescent gaming cultures find that teenagers often interpret these externally produced challenges as personal weaknesses to overcome [21]. This individualized framing may make teenagers less likely to value group-based solutions, such as team mental skills training or organizational wellness programs [2]. It reinforces the idea that psychological resilience is a capacity a person needs to build entirely on their own, rather than a skill that can also be strengthened through support from teammates, coaches, and the broader esports community.

In addition, the social climate of youth esports frequently normalizes toxicity, trolling, and antagonistic communication, obscuring their psychological impact [78]. Many teenage players dismiss such behaviors as inevitable elements of online play [72]. Research suggests that competitive gaming culture perceives trash talk less as deliberate "trolling" and more as a routine by-product of competition, similar to verbal exchanges in traditional sports [69]. This normalization can desensitize players to the cumulative emotional toll of hostile communication and foster a culture in which players either conceal or reframe distress as a marker of competitive toughness [42]. Over time, viewing adversity as a normal part of the game may reduce awareness of healthier communication norms and weaken motivation to address harmful social dynamics within esports communities.

Research on emotional contagion shows that affect spreads rapidly within groups and can significantly shape collective performance and cohesion [4]. Esports studies similarly demonstrate that stress responses under pressure, such as heightened frustration, cognitive overload, and physiological arousal, can propagate across teammates during competition [6, 7]. These findings highlight that toxic moments in youth esports are rarely isolated; rather, they can escalate into shared emotional states that directly influence adolescents' mental well-being and team dynamics.

Finally, many teenage esports players do not expect or seek formal mental health support, even when they feel distressed. Research shows that while many youth competitors report anxiety or depression, only a few have access to structured support in gaming contexts [53, 59]. This lack of infrastructure contributes to the perception that mental well-being is not a recognized or valued dimension of competitive readiness, meaning the overall preparedness to perform that includes skills, strategy, and also psychological resilience [66]. Consequently, players may downplay their struggles or rely on private coping strategies, which keeps problems hidden and reinforces the idea that mental health is a personal issue rather than a shared part of performance and community well-being.

2.3 Stressors Impacting Teenage Esports Players

Esports competitors encounter a range of personal, social, and performance-related stressors, yet how these demands affect adolescents has been underexplored. While competitive gaming commonly involves high performance expectations, interpersonal conflict, and intensive training schedules [15, 62], these dynamics often manifest differently for teenagers. Unlike adult players, adolescents need to balance these demands with schoolwork, family expectations, and identity development in peer-dominated environments, factors that can amplify the emotional and cognitive load of competition [64]. This convergence of competitive and developmental pressures can heighten both cognitive and emotional strain, positioning esports as a space of both achievement and potential psychological risk.

First, personal and lifestyle stressors are among the most immediate challenges faced by teenage players. Late-night matches, prolonged screen exposure, and the culture of 'grinding' can disrupt sleep, impair mood regulation, and hinder academic performance [1, 18]. Studies have found that many esports players engage in late-night gaming, leading to inconsistent and delayed sleep schedules [58, 73]. Poor sleep quality has been associated with slower physical recovery from injuries [3] and reduced efficiency in cognitive functions that are critical for competitive play, such as processing speed [32], sustained attention [19], and working memory [47]. Despite these well-documented risks, adolescents often underestimate the importance of sleep and self-regulation, leaving them to manage physical strain, irregular schedules, and fatigue without structured guidance [61]. Over time, these unmanaged lifestyle factors can accumulate, increasing vulnerability to broader mental health concerns [57].

Second, social stressors in esports often stem from the interpersonal dynamics of competitive play. Communication difficulties, antisocial behavior, and "toxic" team cultures, manifesting as harassment, flaming, or exclusionary humor, are common [41]. The COVID-19 pandemic further reshaped how many teenagers engaged with online games, as digital play became one of the primary spaces for socializing, maintaining friendships, and coping with isolation [11]. Although this shift provided vital opportunities for connection during school closures, it also intensified adolescents' dependence on mediated communication, making peer conflict, toxic exchanges, and emotionally charged interactions feel more pervasive and harder to escape [11, 41]. Female and minority players often face disproportionate exposure to stigma, gender discrimination, and targeted harassment, which can undermine confidence and discourage continued participation [23]. These social stressors may also extend beyond the game, spilling over into school and offline friendship networks, intensifying feelings of isolation or anxiety [46].

Third, performance-related stressors are equally significant. Competitive gamers often face performance pressure, in-game uncertainty, and the fear of letting down teammates [62]. For teenagers, these pressures are intensified by developmental sensitivities to peer evaluation and social reputation [9]. In highly visible and socially networked environments, mistakes can feel amplified, increasing the likelihood of "tilt", episodes of intense emotional frustration following in-game setbacks, that can escalate into self-doubt, interpersonal conflict, and reduced team cohesion [72]. Compounding these challenges, research shows that competitive gamers often lack consistent social and organizational support structures [68], leaving many adolescents to navigate performance stress with limited guidance or coping resources.

In sum, teenage esports players face an interwoven set of personal, social, and performance demands that can place sustained strain on their mental and physical well-being. These pressures are not isolated; rather, they intersect with the developmental realities of adolescence, shaping how stress is experienced, interpreted, and managed. Addressing them requires a developmental perspective that recognizes the unique vulnerabilities and resilience factors of adolescent competitors, moving beyond general wellness advice to targeted, context-specific interventions.

2.4 Strategies and Supports for Mental Well-Being in Esports

Mental well-being strategies in esports range from individual practices to structured organizational programs, aiming to support mental well-being and reduce risks such as burnout. At the individual level, players adopt strategies such as taking regular breaks, exercising, practicing mindfulness, and seeking social support from teammates or friends [41, 45]. At the professional level, supports such as access to sport psychologists, mental skills coaching, and wellness workshops have been shown to enhance performance and reduce burnout [62]. However, research indicates that coaches and mentors frequently lack sufficient training in mental-health and leadership skills, resulting in inconsistent or ineffective implementation of these supports [8]. Moreover, these models are often designed for adult or elite players and rarely adapted to the developmental needs and cultural contexts of adolescents.

Recognizing this gap, several industry-led initiatives have attempted to extend well-being support into broader gaming communities, including those with teenage audiences. For example, the non-profit organization Take This, in partnership with Riot Games, launched the Accelerate Program to provide mentorship, mental health advocacy, ethical design education, and player safety training [67]. Similarly, the Presence of Mind program, created by Cloud9 and Kaiser Permanente, combined training, digital health campaigns, and influencer-led content to reduce stigma and promote help-seeking among esports fans aged 14–25 [12]. Connected Learning Lab, working with the Network of Academic and Scholastic Esports Federations, incorporated Headspace meditation sessions before gameplay to help teenage players regulate emotions and focus [65]. While these programs offer valuable resources, many young players reported low engagement, suggesting that traditional program formats often fail to resonate with the culture and everyday experiences of adolescent gamers [2].

In the absence of supports that feel relevant or accessible, many teenagers turn to coping strategies developed through personal experience and peer influence. These range from muting toxic players and taking breaks after losses to listening to music or reviewing replays for improvement [41, 72]. These strategies can provide short-term stress relief but often lack consistency and may become counterproductive over time. For instance, quitting mid-match to avoid conflict may undermine team cohesion, while excessive "grinding" to recover lost rankings can lead to fatigue, frustration, and interpersonal tension [45]. This reliance on ad hoc methods highlights the need to connect individual coping strategies with more intentional, structured forms of support. This pattern is consistent with developmental research showing that adolescents tend to rely on short-term, emotion-focused coping strategies, such as distraction, withdrawal, or quick behavioral resets, because these approaches offer immediate relief and require less cognitive effort than more sustained, problem-focused strategies [22].

One of the most promising but still overlooked ways to offer support is through peers and community settings. Positive reinforcement, shared in-game rituals, and informal mentorship can strengthen resilience and foster a sense of belonging [64]. Lessons from traditional sports show that cohesive peer groups improve psychological well-being and reduce dropout rates [31]. Effectively applying these lessons to adolescent esports requires first understanding how teenagers themselves experience and express community, and then embedding mental well-being practices within their cultural norms so that they feel natural rather than imposed. In that sense, a participatory design approach, in which youth co-create the resources they use, can bridge the gap between well-intentioned initiatives and the lived realities of teenage players, ensuring that mental well-being strategies are both effective and culturally relevant as well as sustainable [52, 76].

3 Methods

3.1 Participants

This participatory design study involved a total of 34 participants. These included 17 teenage esports players between the ages of 14 and 15, seven collegiate esports coaches aged 21 to 26, five youth esports program coordinators, and five researchers. Among the 34 participants, six identified as female and 28 as male. Additional demographic information can be found in Table 1 and Appendix A.

Although we did not impose any gender or age restrictions, our recruitment resulted in a predominantly male group of teen participants: 16 of the 17 teens identified as male and one identified as female. This distribution reflects broader demographic patterns in youth esports, where boys are significantly overrepresented compared to girls and non-binary youth [56, 77]. We acknowledge this imbalance as a limitation and encourage future research to actively recruit a more gender-diverse sample by oversampling female and non-binary players.

We recruited participants in collaboration with two youth-serving organizations, Seattle Public Library (SPL) and Network of Academic and Scholastic Esports Federations (NASEF). We distributed recruitment materials through each program's communication channels, including Discord announcements, email newsletters,

and in-person library postings. We required that teens were between 14 and 17 years old and actively involved in an organized esports program. We required parental consent, teen assent, and availability during the scheduled workshop times. We did not set any additional exclusion criteria.

Most teens who applied were already active members of other library programs. We also recruited additional participants through snowball sampling, where enrolled teens invited friends involved in local esports communities. As a result, some participants entered the study with existing peer relationships, while others met one another for the first time.

Participants did not receive monetary incentives. Instead, we offered teens priority access to new library-based esports programming, where they could join weekly team-based gameplay. This approach aligned with the natural ecology of the library's esports community and ensured that teens chose to participate voluntarily.

We recruited coaches and program coordinators separately through NASEF. They had no prior relationships with the teen participants, as all interactions began at the start of the study. Coaches met with teens remotely twice per week: once for the participatory design (PD) workshop and once for weekly online team-based practice within the scholastic esports program.

Table 1: Participant demographics

Role	Age	Total	Male	Female
Teenage esports players	14–15	17	16	1
Collegiate esports coaches	21–26	7	4	3
Youth esports program coordinators	–	5	5	0
Researchers	–	5	3	2

3.2 Participatory Design Sessions

3.2.1 Session Logistics and Protocol. We conducted this study over a three-month period, from August to October 2021. At the time, COVID-19 pandemic restrictions were in effect, and in-person gatherings were not possible. Consequently, all research activities were conducted entirely online. We used the Zoom video conferencing platform for synchronous sessions and the Miro collaborative whiteboard for participatory design (PD) activities (see Figure 1). Each session lasted approximately 90 minutes and met once per week, which maintained continuity while giving participants time to reflect between sessions.

We obtained parental consent and child assent for all participants through a secure online consent platform, and the University of Washington's Institutional Review Board reviewed and approved the research. We recorded all Zoom sessions with participants' permission, and teens could choose to keep their cameras on or off based on their comfort. Participants could request deletion of any portion of their recorded data at any time. All recordings and participant-created artifacts were stored on encrypted, access-restricted university servers and will be retained for six years following publication, after which they will be permanently deleted. To ensure safety and privacy in the online environment, we held all sessions in locked Zoom rooms and used pseudonyms in all reporting. Although the study involved minimal risk, the research team prepared to pause sessions if a participant showed signs of distress, and reminded participants of their right to skip activities or withdraw at any time.

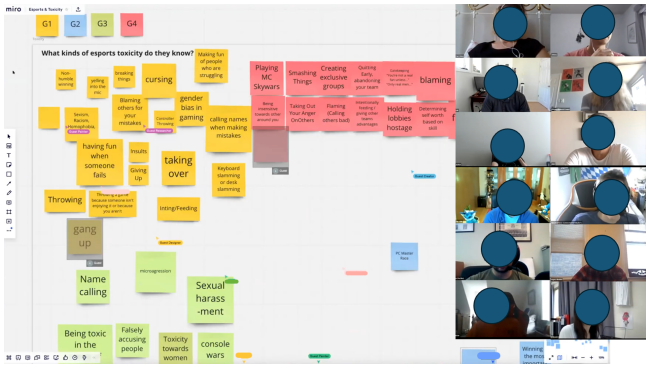


Figure 1: Demonstration of the online participatory design process conducted through Miro and Zoom

3.2.2 Rationale for Using Participatory Design. We selected participatory design over interviews or surveys because our focus was on group dynamics rather than individual accounts. Activities such as affinity diagramming, collaborative comics, and room design required participants to articulate and negotiate ideas with one another, making visible how they collectively understood wellness [71]. Such generative design activities are well-suited for surfacing tacit knowledge, emotional contagion, and relational dynamics that are difficult to capture through one-on-one interviews, surveys, or even traditional focus groups [63, 71]. For example, among the participatory design (PD) sessions that we conducted, mapping tilt and toxicity in PD4 revealed shared gaming experiences, while the coping strategies generated in PD5 highlighted how solutions emerged collaboratively rather than individually. These collaborative insights, such as how teens build on one another's experiences, negotiate meanings, and reveal shared emotional dynamics, are unlikely to surface in individual interviews or surveys, which focus on personal accounts rather than group sensemaking.

Although these sessions did not produce a final designed artifact, they represent the exploratory, early-stage phase of a larger co-design project. Researchers in HCI frequently use participatory design not only to create artifacts but to surface young people's mental models, values, and relational dynamics. For example, Yip et al.'s study on children's perceptions of "creepy" technologies used PD to elicit conceptual understandings of privacy and discomfort rather than to produce finished designs, demonstrating how PD can function as a generative, inquiry-driven method [75]. Similarly, the "Money shouldn't be money!" study used PD to explore children's mental models of financial literacy and technology, further illustrating how co-design facilitates reflection and conceptual exploration rather than solely artifact creation [74].

Our use of PD follows this approach. The empirical insights developed through PD2–PD9 directly informed the subsequent design

Table 2: Overview of participatory design sessions with teen esports players

#	Main Theme	Design Activity	PD Method
PD1	Bonding	Analyzing game streaming platforms (YouTube vs. Twitch)	Like/Dislike reflection
PD2	Mental Well-Being	Defining healthy vs. unhealthy players	Drawing
PD3	Mental Well-Being	"My World, My Feelings, My Relationships, My Future"	Analysis framework
PD4	Gaming Experience	Brainstorming toxicity in gaming	Affinity diagram
PD5	Gaming Experience	Creating interventions for toxic situations	Comic storyboard
PD6	Sleep	Designing sleep environments	Room design with items
PD7	Sleep	Identifying sleep disturbances	Word cloud
PD8	Tilt	Exploring tilt situations in gameplay	Video reflection
PD9	Tilt	Coping strategies for tilt	Speed words

and development of "TITLED", which is reported in a separate publication [21]. In this sense, this paper presents the PD work as the foundational phase of a multi-stage design process that first establishes how teens conceptualize mental well-being in esports before advancing toward prototyping and intervention development.

3.2.3 Overview of PD Sessions. The PD process followed an inductive, iterative structure: each week's activities were informed by insights from the previous session, and themes accumulated across sessions. This approach scaffolded participants' reflections from surface-level impressions to deeper analyses of stressors, coping strategies, and broader definitions of mental well-being. The following describes each PD session in detail.

PD1 was a bonding session designed to establish rapport, familiarize teens with online collaborative tools, and surface their baseline engagement with esports platforms. Participants compared YouTube and Twitch, reflecting on what they liked or disliked and how streaming culture shaped their gaming experiences. Since PD1 primarily served as orientation and team building, we did not include it in the results analysis. **PD2** served as the conceptual anchor for the entire process. Teens visually represented their mental models of "healthy" versus "unhealthy" esports players, illustrating behaviors, routines, and outcomes associated with each. These depictions established a shared vocabulary around mental well-being and provided the foundation for subsequent sessions.

PD3 deepened the analysis by revisiting PD2 artifacts through a structured framework adapted from NASEF's Wellness Model, "My World, My Feelings, My Relationships, My Future." [50]. This activity encouraged participants to classify wellness across multiple domains (physical, emotional, relational, and aspirational), providing more structure and clarification to their ideas about well-being.

PD4 and PD5 shifted focus to the causes of unwellness, centering on toxic experiences and emotional stress in competitive play. Using affinity diagramming (PD4) and comic-based storytelling (PD5), participants identified triggers of toxicity and illustrated how these moments felt and how they might be resolved. These activities highlighted the social and emotional challenges that undermine wellness in esports.

PD6 and PD7 explored environmental and lifestyle factors, particularly sleep. Through a room design activity (PD6), participants visualized their ideal sleep environments and identified elements that support or hinder rest (see Figure 4). PD7 complemented this with a word-cloud activity, where teens brainstormed factors that disrupt sleep and reflected on how fatigue affects emotional regulation during play.

PD8 and PD9 addressed outcomes and coping. In PD8, participants engaged in video reflection, watching curated clips of tilt-inducing game moments and discussing their own reactions to similar experiences. PD9 extended this with a speed-word generation exercise, rapidly surfacing a wide range of strategies teens use to regulate emotions, recover from tilt, and re-engage with the game.

Taken together, we designed PD2 through PD9 as an interdependent sequence rather than isolated activities. Each session was linked to a distinct analytical lens—causal explanation (why), experiential impact (so what), or reflective understanding (how). This layered structure enabled us to progressively construct a holistic understanding of wellness in esports, grounded in teen players' lived experiences. The overall PD logic is illustrated in Figure 2. By centering youth voices, the study not only identified how teens define mental well-being but also illuminated its contributing factors and consequences across social, emotional, and environmental contexts.

3.3 Data Collection

3.3.1 Video recordings. We recorded all PD sessions using the Zoom platform's built-in recording feature to capture both audio and video. These recordings documented the full duration of each session, including group discussions, presentations, and interactive activities on Miro. The video data provided a rich record of participants' verbal and non-verbal expressions, enabling detailed analysis of communication patterns, collaborative dynamics, and emergent ideas throughout the PD process.

3.3.2 Field note. During each session, the research team maintained detailed field notes to capture contextual observations that might not be fully represented in the video recordings. These included participant interactions, moments of engagement or disengagement, technical issues, and notable reactions to specific prompts or activities. Field notes were written immediately after each session to ensure accuracy and to preserve the researchers' immediate reflections and interpretations.

3.3.3 Design Archives. We preserved all artifacts generated during the PD sessions as part of the design archives, including participants' Miro boards, sketches, diagrams, and written responses to prompts,

Table 3: Codebook for teenagers' mental well-being in esports

Theme	Code Group	Brief Description
Mental Models of Wellness	Physical & lifestyle habits	Practices related to bodily health, daily routines, and organized living environments.
	Psychological regulation	Processes of managing emotions, maintaining focus, and sustaining mental balance during play.
	Social relationships	Ways of building, maintaining, and valuing supportive connections with peers and communities.
	Purpose & aspirations	Orientations toward goals, responsibilities, and long-term balance with broader life priorities.
Stressors	Toxic experiences	Negative social encounters that create hostility, exclusion, or unsafe environments.
	Tilt & emotional contagion	Escalating emotional reactions that spread among players and intensify stress.
	Sleep disruption	Challenges to rest and recovery that undermine well-being and consistent performance.
	Relational conflict	Tensions within families, friendships, or teams that disrupt social harmony.
Coping Strategies	Self-regulation	Individual techniques for recognizing, managing, and adjusting emotional responses.
	Supportive interactions	Reliance on social encouragement, empathy, and collective care.
	Environmental adjustments	Modifications to physical or digital settings that reduce stress and support balance.
	Intervention strategies	Short-term practices or alternative approaches used to manage immediate stressors.

and any visual or textual materials shared during activities. The design archives served both as a record of the creative process and as primary data for thematic and visual analysis, allowing researchers to trace the evolution of participants' ideas across sessions.

3.4 Data Analysis

We employed an inductive thematic analysis [14] to examine video recordings, field notes, and design artifacts generated during the PD sessions. To enhance the reliability of the findings, we implemented within method researcher triangulation [17]. Three researchers participated in the coding and analysis process, following procedures consistent with consensual qualitative research [34, 35]. This collaborative structure ensured continuity, multiple perspectives, and consensus-building in the development of the final themes.

3.4.1 Unit of Analysis and Coding Process. We defined the unit of analysis as a meaning unit, referring to a coherent segment of data that captured a single idea in context, which allowed us to identify participants' ideas and the nuanced meanings expressed across recordings, notes, and artifacts.

The analysis process followed three stages: (1) open coding, (2) thematic development, and (3) refinement of the final codebook. In the open coding stage, researchers independently reviewed the raw data to identify emergent patterns relevant to the research questions [24]. Initially, the primary researcher conducted open coding, with simple descriptive labels for behaviors, emotions, characteristics, and dynamics. Subsequently, the other two researchers followed the same strategy. The researchers held multiple meetings to compare code sets, discuss discrepancies, and reach consensus. Codes addressed topics such as player wellness perceptions, social dynamics, and design ideas. In cases where conflicts arose, the third researcher served as an impartial reviewer to resolve disagreements, ensuring consistency in coding decisions.

After the initial coding, the research team engaged in multiple rounds of collaborative review to refine and consolidate themes. These meetings involved diverging to explore alternative interpretations, revising to remove redundancy, and synthesizing codes into higher-level thematic categories. This iterative process ensured that the final themes were both grounded in the data and aligned with the study's conceptual focus. The resulting codebook, presented in Table 3, reflects the core themes and subthemes identified through this process and served as the analytical framework for interpreting participants' contributions.

3.4.2 Data Saturation. In order to ensure a comprehensive analysis, we examined the complete dataset of the nine PD sessions. Through an iterative process of coding and consensus meetings, we assessed data saturation retrospectively [13]. We observed that distinct thematic patterns were established and stabilized, with no new high-level codes emerging prior to the final round of analysis.

4 Results

4.1 RQ1. How do teenage esports players understand and express mental well-being through participatory design?

Findings for RQ1 primarily emerged from PD2 and PD3. In PD2, participants visually represented their mental models of wellness by drawing what they considered to be "healthy" and "unhealthy" players (see Figure 2). PD3 then extended this activity by applying the adapted Network of Academic and Scholastic Esports Federations (NASEF) wellness framework [50], which is "My World, My Feelings, My Relationships, My Future" to interpret these drawings and articulate how well-being is distributed across personal, relational, and aspirational domains.

Participants distinguished healthy from unhealthy players through observable characteristics and implicit perceptions of balance across lifestyle, psychological, and social domains (See Table 4).

Physical and lifestyle habits. Teens frequently emphasized external cues such as facial expression, posture, and personal care. P2 from PD2 identified posture as one of the key traits distinguishing an unhealthy player, describing them as "leaning over in their chair with like a curved back and stuff ... he doesn't have good posture." Participants also invoked sleep and physical fatigue when describing unhealthy players, particularly in relation to excessive play,

Figure 2: Demonstration of healthy vs unhealthy player by teen esports players in PD2

poor self-control, and sleep deprivation. In contrast, they depicted healthy players as maintaining regular sleep schedules, physical activity, and a clean gaming environment.

Psychological regulation. Participants highlighted emotional awareness and stress management as central to wellness, noting that a healthy player can calm down themselves, regulate emotions, and prevent tilt. A few participants specifically addressed such intervention strategies for emotional regulation as a key trait of healthy players: "healthy people ... I think the ability to take breaks" (P6, PD2). These reflections align with codes such as *Wellness habits*, *Taking break*, and *Emotional regulation*, underscoring the importance of self-management.

Social relationships. Well-being was closely tied to supportive interactions with peers, both in and out of the game. Participants frequently addressed the relational aspect, emphasizing community, friends, and other gamers. P1 from PD2 mentioned unhealthy players facing stress outside of the game "because their parents don't like them playing games or something, so he has to deal with a lot of stress." Meanwhile, many participants commonly emphasized relationships within games affecting overall gameplay experience: "if you have the support of teammates, like that's really what makes the games good" (P1, PD8). Codes such as *Supportive to others*, *Empathy*, and *Relational stress* show how teens linked mental well-being to cooperation, empathy, and positive community connections, whereas toxicity and isolation were consistently associated with unhealthy states.

Purpose and aspirations. Finally, participants associated mental well-being with broader personal development and future orientation. P2 from PD2 mentioned that healthy players are more "goal oriented and motivated" while unhealthy players have "lost their goal or purpose, so they get really angry by this gameplay, but they kind of have forgotten why I'm doing this in the first place." Participants described healthy players as responsible, goal-driven, and focused on skill development, while they characterized unhealthy players as overly focused on winning, neglectful of schoolwork, or dismissive of future planning.

Taken together, these findings show that teens anchor mental well-being in teamwork, social responsibility, and collective achievement. While we discovered that teens defined these factors as key traits of "healthy" players, these concepts often made adolescent players vulnerable, serving as stressors. For instance, social relations could rather disrupt their ability to support others or perform well through external pressures, unpredictable in-game events, or volatile team dynamics. To understand where these tensions arise, and why sustaining mental well-being becomes difficult in practice, the next section examines the stressors teens identified as most disruptive to their mental well-being in esports.

Table 4: Summary of analyzing mental model by using wellness model in PD3 [50]

Domain	Healthy	Unhealthy
My World *(self, choices, spaces)*	Takes breaks, good posture; Regular sleep schedule; Exercise, healthy diet; Clean/organized environment	Sleep deprivation; Sedentary lifestyle; Poor diet; Cluttered/dirty environment
My Relationships *(community, connections, communication)*	Teamwork, leadership; Supportive community; Strong, positive connections	Few friends; Toxic behavior; Lack of support; avoids responsibility
My Feeling *(purpose, passions)*	Enjoys gaming; Diverse hobbies/interests; Clear goals and values; Builds positive community	Winning obsession; Anger management issues; Negative emotions; Poor cooperation
My Future *(career, skills, interests)*	Responsible; Develops skills; Plans for the future; Good work ethic	Blames others; No future focus; Neglects schoolwork

4.2 RQ2. What stressors affecting their well-being do teenage esports players identify through participatory design?

Findings related to RQ2 primarily emerged from PD2, PD4, PD6, PD7, and PD8. Participants identified multiple sources of stress that disrupted their mental well-being with games. These included toxic in-game interactions, performance pressure, sleep disruption, and relational conflict.

Toxicity as a pervasive stressor. Exposure to flaming, trolling, and harassment was the most frequently described challenge. Teens explained how such encounters often led to emotional overload or tilt. Some participants reported their experience of being offended

by other players who have the "intent to hurt ... when you're like, Darn I hate you, you suck" (P3, PD3). Participants repeatedly identified others' toxic behaviors as a key stressor. While most toxicity was perceived to occur during the game match, it was also prevalent before and after the match itself, noted as pre-match and post-match (see Appendix B). For instance, P2 from PD4 noted that toxicity "happens in basically all stages of of gaming ... people are going to use racial slurs like at any point in the match." This highlights that teen players experience toxicity as a pervasive part of the gameplay rather than an isolated incident.

These experiences align with codes such as *Exposure to toxicity*, *Flaming*, and *Toxic spaces*, underscoring how hostile social interactions destabilize emotional regulation. Figure 3 shows some of the behaviors or experiences associated with toxicity that teens addressed.

Figure 3: Final result of PD4 on perceived toxicity

Perceived tilt with social context. As one participant shared as one of their negative experiences, "they[players] just say, we suck, or you boosted ... they start coming after our names or who we play or stuff" (P5, PD4). This pattern of tilt was a common experience within team gameplay situations. Meanwhile, such tilt or stress is contagious as well: "if people are tilted, it can cause a lot of stress and it could be really contagious towards other people like I get really stressed" (P2, PD8). This implies that tilt should be addressed through improved social abilities and mutual understanding, such as empathy. Ultimately, it would require the development of customized coping strategies for each player to build emotional resilience and to prevent or collectively manage tilt as a team.

Self-induced pressure. Players also emphasized self-induced stress caused by lack of confidence or unhealthy mindset. They addressed how they constantly compared themselves to other players. "If you're playing someone who's better than you ... you're going to lose. Maybe if you're not the best player on your team ... you're that you're going to be dragging the team down" (P5, PD4). Such anxiety caused stress from the pre-game stage and continued afterward during post-game period as well. This stress reflects codes such as *In-game stress*, *Self-deprecation*, and *Self-awareness/mindset*.

Sleep disruption. Poor rest and late-night gaming emerged as another category of stress. Teens' environments such as noises or peers playing would interfere with sleep, prompting extended nighttime play. Meanwhile, undirected or addictive gameplay also led to less sleep. One participant mentioned that there are "definitely some nights I would, like, stay up way later than I should have, just because, like, my friends were still playing" (P6, PD5). These cases map to codes like *Sleep & Health links*, *Emotional overload*, and *Uncontrolled gameplay*, highlighting how sleep deprivation exacerbates irritability and fatigue (see figure 4).

Figure 4: Screenshot of one of PD6 session outputs

Relational conflict. Finally, participants reported stress stemming from tensions with teammates, family disruptions, and environmental distractions. A participant noted, "unhealthy gamer might also be a lot of emotional stress because their parents don't like them playing games" (P1, PD2). Such experiences reflect codes like *Relational stress*, *Environment influence*, and *Getting emotional*, showing how interpersonal and contextual pressures compound in-game frustration.

Taken together, these stressors illustrate how competitive gaming environments intersect with personal, social, and physical domains. Toxic behaviors, performance anxieties, sleep challenges, and relational conflicts collectively shape teenagers' capacity to sustain mental well-being in esports contexts. Since these stressors are often unpredictable or outside of their control, adolescent players should constantly find ways to regulate emotions, reset mentally, and maintain stability within their teams. To understand how teens navigate these pressures moment to moment, the next section examines the coping strategies they rely on, both the everyday practices they develop independently and the social supports that help them manage the demands of competitive esports.

4.3 RQ3. What coping strategies do teenage esports players suggest to support their mental well-being through participatory design?

Regarding RQ3, participants generated most strategies in PD5, PD8, and PD9, where we prompted them to discuss possible strategies for mental well-being. Teen players described a range of self-directed and socially supported practices for managing stress and maintaining wellness. These strategies clustered around three primary themes: supportive interactions, self-regulation, and environmental adjustments. Notably, there was a gap between participants' perceived strategies and actual practices: the results particularly highlight intervention strategy as a primary coping strategy while other practices remained conceptual rather than practically integrated.

Self-regulation. The most common strategies focused on regulating one's own emotions through mindset framing and avoiding

addictive gameplay habits by being mindful of their own gameplay. Teens highlighted *Purposeful gameplay*, since "it really helps to remind yourself of why you're playing the game. And ultimately, that usually is to have fun" (P6, PD4). Mindset framing strategies such as considering losses as learning opportunities or reminding themselves of next chances highlighted resilience and proactive emotion regulation: "A loss is practice" (P7, PD5), "I guess just knowing that we all make mistakes. And we can try again" (P13, PD8). Same participant also highlighted an interesting mindset called 303030 rules, which illustrates "no matter how much your skills are higher, you will lose 30%, no matter how your skills are not good, you will win [30%]. The rest of 30% depends on your skills." Such practice aligns with *Emotional regulation*, *Self-awareness/mindset*, and *Wellness habits* codes as well.

Supportive interaction. Teens emphasized the role of healthy connections with others in maintaining well-being. This first involved supportive atmosphere within the teammates within the game. In this sense, well-being was not only an individual task but a shared responsibility within the team, where encouragement and empathy served as protective resources: "if you have that supportive teammate who's still saying like all it's okay, we'll get them next time ... makes the game a lot easier and a lot more fun" (P14, PD8). Meanwhile, supportive interaction is not limited to encouragement. As one participant explained, "[it] is really nice when someone in the game actually gives you constructive criticism" (P6, PD4). This suggests that teen players valued feedback that could help them improve, defining support not only as emotional encouragement but also as practical guidance. At the same time, supportive interactions with those outside the game, such as their families and friends, also served as a buffer to relieve stress. These practices map to codes such as *Social support*, *Empathy*, and *Supportive to others*.

Environmental adjustments. A third set of strategies centered on adjusting the gameplay environment. Teens highlighted that setting comfortable environment and even eliminating distractions could serve as buffers for stress. P1 from PD9 mentioned that "eliminating your distractions and your environment" is a very essential strategy. Rather than relying solely on individual coping mechanisms, the surrounding environment also played an important role in preventing and relieving tilt. These structural adjustments reflect codes such as *Environment as buffer* and *Environment as influence*, demonstrating that teenagers recognize the role of broader environments in shaping stress experiences. Such strategies suggest that players saw well-being as embedded in both the physical and social settings of play.

Intervention strategies. Teens mentioned various types of coping strategies with stress they face with the game ranging from self-regulation to interaction with others and even environmental adjustments. However, these were perceived strategies rather than the ones they actually practice in their practical settings. P5 from PD8 mentioned "encouraging each other rather than trolling" is too idealistic that "nobody does that." P6 from the same session also addressed that breathing exercises are perceived to be "cheesy." Instead, a common pattern observed in teen players' actual practices was the use of intervention strategies that allowed players to consciously pause and step away from the game. The most frequently mentioned ones were taking breaks and getting snacks. Even more trivial ones such as opening the fridge (P7, PD9), jump on the bed (P12, PD9), and open a coloring book (P8, PD9). Participants pointed out that it helps them reset from the tilt (P5, PD9). A few examples of intervention strategies they pointed out have a wide variety as shown in figure 5.

Across the three themes, teenagers relied less on formal wellness tools and more on organic, context-sensitive strategies. Most commonly, they coped with tilt by stepping away temporarily, calming themselves through sensory cues, reframing their mindset, or drawing strength from peers. These practices reveal a model of mental well-being rooted in autonomy, peer solidarity, and adaptive use of the environment, demonstrating resilience and creativity in how adolescents manage emotional strain in esports contexts.

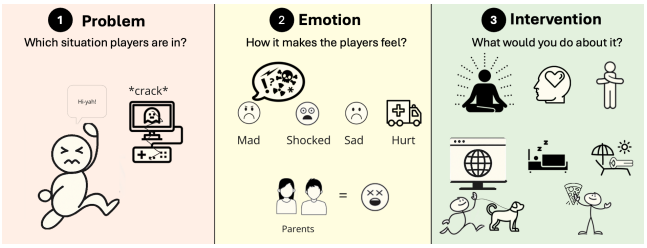


Figure 5: One of the results from PD5 comic boards

5 Discussion

5.1 For Teens, Being 'Healthy' Means Winning Together

A striking finding from our study is that teenage esports players did not primarily describe mental well-being in terms of individual emotions such as happiness, sadness, or anger. Instead, they framed mental well-being through a mix of competitive performance and social responsibility. Participants described healthy players as individuals who supported family and friends, cared about teammates, and took responsibility for collective outcomes. By contrast, unhealthy players were characterized as those who blamed others, lacked social connections, or received little parental support (e.g., parents do not approve gaming). This suggests that adolescents locate their sense of well-being not solely in their inner emotional states, but also in how they perform and how they are embedded in supportive social networks.

The emphasis on social responsibility stands in sharp contrast to scholastic esports programs. Prior research shows that youth players frequently report limited emotional scaffolding from coaches, inconsistent peer support during stressful matches, and organizational programs that do not reliably foster psychological skill development [8, 29, 68]. In light of this gap, the degree to which teens in our study emphasized social responsibility and mutual care highlights not only what they value, but also what is frequently missing in their current competitive environments.

Adolescent development further amplifies these dynamics. During this stage, peer evaluation, belonging, and social recognition play a central role in shaping how they see themselves [9, 64]. As a result, their understanding of mental well-being is less about private emotional states and more about how well they fulfill social roles, maintain trust, and contribute to collective outcomes. In

this sense, esports amplifies existing adolescent sensitivities by embedding mental well-being directly into competitive and relational dynamics.

This perspective both confirms and complicates existing work on youth sports and esports. Prior research emphasizes emotion regulation and resilience as central to adolescent well-being in digital play [41], while sports psychology highlights the importance of teamwork, peer trust, and coach support for athlete wellness [49]. Our findings resonate with these perspectives by showing that teens anchor well-being in both confidence and relational stability. Yet they also diverge from much of the esports mental well-being literature, which often frames mental health in terms of screen time management, cognitive fatigue, or individual stress regulation [40, 45]. Instead, our data reveals that teenagers themselves foreground social responsibility, being accountable to teammates, caring for friends, and maintaining family support, as defining features of what it means to be "healthy." In this sense, adolescent players position well-being as a collective achievement, not merely an individual state.

These insights carry important implications for designing mental well-being interventions. Much of the existing guidance in esports emphasizes self-regulation strategies such as mindfulness training or limiting playtime [54, 62], but our findings suggest that such approaches may miss the lived realities of teenage players. When well-being is defined through performance and relationships, interventions that treat mental well-being as an individual checklist risk appearing irrelevant. Instead, initiatives need to build on the ways teens already conceptualize health: as care for others, responsibility to teams, and support from families. This perspective aligns with research that identifies community and social climate as critical factors shaping well-being in online gaming [42, 59, 72]. Framing mental well-being as a shared practice, rather than a private burden, may therefore provide a more authentic and sustainable foundation for resilience in adolescent esports communities.

5.2 Stress From What Teens Cannot Control

Building on our finding that teenagers define mental well-being through performance and social responsibility, our data shows that much of their stress in esports arises precisely from factors they cannot control. Participants emphasized that even when they cared about teammates or tried to be responsible, outcomes often depended on uncontrollable elements: a teammate's poor performance, unpredictable in-game events, or the structural demands of competition schedules. Participants also frequently described tilt not as a purely individual reaction but as something triggered by external disruptions and amplified by team dynamics. In this sense, participants experienced stress as a relational burden that cascaded across players, undermining the very social foundations of mental well-being that they themselves valued.

These findings resonate with prior research documenting how volatility and systemic pressures shape competitive gaming environments. Poulus et al. [54] and Kresina et al. [43] show that irregular training schedules, unpredictable game mechanics, and unstable team compositions are major drivers of adolescent stress in esports. Similarly, studies in youth sports highlight that peer conflict, performance pressure, and organizational demands are primary sources of psychological strain [16, 33]. Our results extend this literature by showing how teens internalize these uncontrollable factors as threats to their own well-being, precisely because they define being "healthy" as winning and being accountable. When success defines well-being, any external disruption translates into a personal failure, making stress in esports both more pervasive and more difficult to manage.

Unlike contexts where young people can avoid stressors by withdrawing, esports players cannot simply remove themselves from competition. They voluntarily return to play despite knowing the environment is inherently stressful, because it is also where they pursue achievement and belonging. This paradox underscores the limits of wellness models that rely solely on individual self-regulation or stress avoidance [45, 62]. Instead, resilience in esports must be understood as the ability to adapt to systemic and relational pressures that cannot be eliminated. Supporting teens, therefore, requires interventions that acknowledge the structural realities of competition, volatile games, team interdependence, and rigid systems, rather than placing responsibility solely on individuals. By situating stress within these uncontrollable contexts, mental well-being efforts can better align with how adolescents themselves experience the challenges of competitive play.

5.3 Tilt, Toxicity, and the Need for Emotional Resilience

Our findings confirm that players widely experience toxicity in esports as a contagious social dynamic. Teens described hostile communication, trash talk, and antagonistic behaviors as "spreading" quickly across players and teams, often escalating beyond any one individual's control. Even when participants normalized toxicity as "part of the game," they still acknowledged its corrosive impact on team cohesion and morale. Prior work has similarly argued that toxicity should be understood as a cultural practice embedded in gaming communities rather than as the actions of a few individuals [42, 78]. This suggests that mental well-being in esports cannot be reduced to personal self-regulation but must grapple with the collective ways in which negativity multiplies during play.

These dynamics also intersect with adolescents' developmental vulnerabilities. Emotional regulation systems are still maturing during the teenage years [9, 64], making youth more susceptible to intense frustration and the contagious spread of tilt compared to adults. At the same time, the desire for peer approval heightens the stakes of team-based conflict, intensifying the social and emotional toll of toxicity. Thus, tilt in teen esports is not only a gaming phenomenon but also a reflection of broader developmental sensitivities to emotion and peer influence.

Within this broader culture of toxicity, we found that tilt most often occurred within teams rather than across opposing sides. A single mistake or moment of underperformance frequently set off frustration that spread among teammates, triggering cycles of blame, conflict, and deteriorating play. Importantly, this tilt dynamic primarily harmed those on the same team, as emotional contagion compounded the pressure adolescents already placed on themselves to win and to support their peers. In this sense, tilt

was not merely an individual lapse of control but a relational process embedded in team interactions. This finding extends earlier research on emotional contagion in games [4, 41], highlighting how not only external opponents but also tensions within their own teams destabilize adolescent well-being .

These intertwined dynamics of toxicity and tilt underscore the importance of building emotional resilience among teenage players. While the field of sports psychology widely discusses resilience, much of this work focuses on how resilience can be identified or measured rather than how it develops. For instance, recent work conceptualizes resilience as a dynamic recovery process, emphasizing indicators such as recovery speed and critical slowing down [26]. Our findings extend this perspective by illustrating that, in teen esports, resilience is not only an individual capacity but also a relational process shaped by tilt contagion and team-based emotional dynamics.

Resilience in this context means more than "toughing it out"; it involves developing the capacity to regulate emotional responses, interrupt the contagion of tilt, and sustain constructive relationships under pressure. Prior work shows that resilience is strengthened through supportive environments, shared responsibility, and reflective practices [70]. Applied to esports, this implies a dual strategy: equipping individuals with micro-strategies to manage frustration in the moment, while also fostering collective practices, such as empathy, encouragement, and structured debriefs, that can shift cultural norms away from toxicity. By foregrounding emotional resilience, mental well-being interventions can help adolescents navigate the unpredictable pressures of competitive play without allowing tilt and toxicity to define their gaming experiences.

5.4 Everyday Coping and the Design of Micro-Interventions

While teenagers perceived mental well-being and stressors in primarily social terms, which anchored in team dynamics, responsibility, and uncontrollable systemic pressures, their coping strategies looked very different. When it came to managing stress, players overwhelmingly preferred individual approaches that were simple, immediate, and practical. Rather than turning to structured programs such as mindfulness training or guided reflection, participants emphasized everyday actions that provided quick relief: grabbing a snack, lying down, stepping away from the screen, or drinking water. These small routines helped players reset in the face of stressors they could not control, allowing them to re-enter play with a clearer mindset. These preferences on simple, self-directed coping align with developmental research showing that adolescents tend to favor immediate, emotion-focused strategies that provide short-term relief rather than structured or sustained regulation practices [22]. Such situational coping is common during early and middle adolescence, a period when cognitive control systems and reflective coping are still developing.

This reliance on everyday coping also contrasts with much of the esports mental well-being literature, which emphasizes formalized interventions aimed at individual self-regulation, such as stress management workshops, sleep hygiene campaigns, or institutional wellness programs [45, 62]. Prior work has shown that these initiatives often struggle with low engagement among youth because they feel disconnected from players' lived realities [65]. Our findings echo this gap: teenagers frequently dismissed institutional tools as overly idealistic or "cheesy," as addressed by P6 from PD8 talking about breathing exercises, preferring strategies that were low-barrier, self-directed, and embedded in the rhythms of everyday play. Prior studies of adolescent health have similarly found that youth are more likely to adopt interventions when they align with practices already seen as meaningful and effective in daily life [25].

Taken together, these insights suggest that supporting adolescent esports mental well-being requires interventions that are both simple and personalized. Because stress in esports often arises from uncontrollable factors (e.g., tilt within teams, contagious toxicity, or volatile game systems), there can be no one-size-fits-all solution. Effective support therefore depends not only on context-sensitive strategies but also on understanding both the individual and the team. Coaches and peers can also play an important role in this process. Prior research on sport coaching shows that coaches contribute to athletes' psychological resilience by helping players recognize, adapt, and refine coping strategies that fit their individual needs [8]. In youth esports settings, this suggests that coaches and peer leaders should focus on guiding players toward context-sensitive strategies that resonate with their emotional styles and moment-to-moment challenges [21].

Although these micro-interventions operate at the individual level, our findings suggest that they are most effective when supported by the broader team environment. This aligns with resilience research emphasizing that individual regulation and environmental structures work together rather than in opposition [4, 29]. Teens' moment-to-moment strategies, such as taking brief pauses, muting chat, or seeking quick reassurance, are easier to enact when coaches and peers create norms that legitimize emotional resets and support short breaks. Micro-interventions function as the tactical layer of resilience, while team climate, communication patterns, and shared expectations provide the structural layer that enables these practices to succeed.

Opportunities lie in micro-interventions that are seamlessly embedded into gameplay. These may include subtle break prompts, sensory cues that encourage relaxation, or mechanics that scaffold peer encouragement rituals. Unlike rigid institutional programs, such approaches align with strategies teens already find meaningful, such as taking quick breaks, seeking encouragement, or resetting emotionally and extend them into the flow of play. In doing so, they not only provide immediate relief but also strengthen the capacity for emotional resilience, equipping players to better navigate the unpredictable, relational pressures of esports. By emphasizing personalization, relational awareness, and resilience-building, interventions can create mental well-being infrastructures that feel authentic to teenagers while also sustainable within the competitive environments they inhabit.

5.5 Emergent Fit with Cognitive Behavioral Theory

Although our study followed an inductive approach, we identified an important theoretical insight when synthesizing the findings

across sessions: the patterns adolescents articulated closely resembled the interrelated cycles of cognition, emotion, and behavior described by Cognitive Behavioral Theory (CBT). CBT has long been used to explain how distorted appraisals contribute to emotional distress and maladaptive behaviors, while adaptive reframing and behavioral activation can support resilience and well-being [37].

A central finding in our data was that adolescents distinguished "healthy" from "unhealthy" players primarily through emotional and relational qualities rather than technical skill. Healthy players were described as those who could regulate emotions, maintain supportive team dynamics, and sustain a sense of purpose. Unhealthy players, by contrast, were characterized by volatility, blame, or withdrawal. Emotional states, such as frustration, sadness, excitement, were not peripheral but the primary mechanism determining whether players experienced wellness or mental distress. This aligns with research showing that emotion regulation is central to resilience and peer relationships in adolescence [9, 41]. From a CBT perspective, these distinctions reflect how cognitive appraisals ("I'm dragging the team down") shape emotional responses (tilt, frustration) and subsequent behaviors (toxic communication, withdrawal). Conversely, reframed thoughts ("A loss is practice") enabled calmer emotions and constructive team play. In this sense, mental well-being in esports can be reframed as an ongoing emotional process, rooted in cognitive–behavioral cycles, rather than a static set of individual habits (see Figure 6).

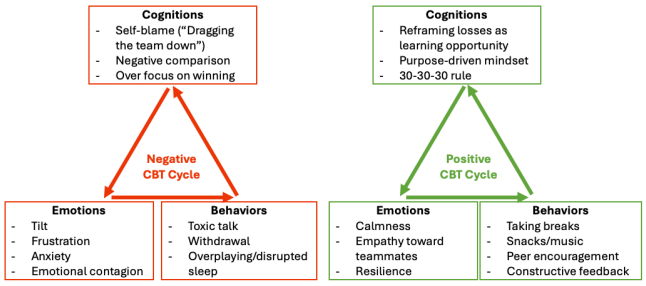


Figure 6: CBT cycles in teenage esports players: negative vs. positive pathways

This alignment was further evident in how participants described tilt and toxicity. Adolescents often described sequences in which negative cognitions, such as self-blame, unfavorable comparisons, or feeling responsible for dragging the team down, led to intense emotions. Conversely, participants also pointed to more adaptive pathways: reframing losses as learning opportunities, taking breaks to reset emotionally, or encouraging peers. These accounts mirror core CBT mechanisms such as cognitive restructuring, emotion regulation, and behavioral activation [37, 38]. While our study did not track an individual's moment-to-moment progression, the repeated recurrence of these thought–emotion–behavior patterns across different participants provides collective evidence for CBT-like cycles in the context of esports.

At the same time, this emergent fit requires careful interpretation. CBT traditionally emphasizes intrapersonal processes, focusing on how an individual's thoughts shape their emotions and actions over time [5]. In contrast, we generated our data through participatory design sessions and synthesized perspectives across many adolescents rather than tracking a single case longitudinally. This means that the CBT framework is not used here to claim causal or sequential mechanisms at the individual level, but rather to highlight structural similarities between youth-reported experiences and CBT principles [38, 39]. By treating CBT as an interpretive lens rather than a prescriptive model, we preserve the inductive integrity of our findings while situating them in a broader theoretical tradition.

This emergent resonance with CBT carries both theoretical and practical implications. From a theoretical perspective, adolescents' accounts of mental well-being in esports align with a cognitive–emotional–behavioral lens that bridges developmental psychology and esports research. From a practical perspective, these findings point to opportunities for designing interventions that build on teens' own CBT-like strategies, such as reframing losses, taking short resets, or seeking social reinforcement, rather than relying solely on formal or institutional programs. In this way, CBT does not overwrite the inductive themes of our study but provides a scaffolding that can guide future research and intervention design, linking youth perspectives with established psychological theory.

6 Limitation and Future Work

This study has several limitations. First, our participants were predominantly male teenagers recruited through youth esports programs, which limits the diversity of perspectives represented. Because girls and non-binary youth remain underrepresented in many esports settings, future research should intentionally oversample these groups to capture a fuller range of experiences.

Second, we conducted all participatory design sessions online between August and October 2021 due to COVID-19 restrictions. Consequently, teens reflected on their esports experiences within a predominantly remote play setting, lacking in-person contexts such as in-person esports clubs or public gaming venues. Although we identified many of the key themes, including emotional regulation challenges, encounters with toxicity, and reliance on informal peer-based coping that align with recent studies [10], the solely online context may have shaped how teens articulated these stressors and support systems [11]. Future work should examine how these dynamics manifest in contemporary hybrid or in-person esports environments.

Third, this study was exploratory and involved a relatively small group of participants. While the PD process enabled rich qualitative insights, larger-scale or longitudinal studies would clarify how perceptions of mental well-being and coping strategies evolve across different competitive environments and developmental stages.

7 Conclusion

This study examined how teenage esports players perceive and manage mental well-being through a participatory design approach. Our findings show that adolescents define mental well-being less as an individual state of discipline or emotional control and more as a relational and collective practice, supporting teammates, caring for peers, and sustaining a sense of purpose. Mental well-being, in their

view, emerges from balancing lifestyle routines, regulating emotions, and nurturing supportive relationships, all while remaining accountable to others.

At the same time, teenagers highlighted stressors that lie largely outside their control, including contagious tilt, toxic peer dynamics, sleep disruption, and relational conflict. These challenges reveal that esports mental well-being is not simply an individual task but a systemic and social issue. Coping strategies reflected this complexity: while formal programs often emphasize structured techniques, teens overwhelmingly relied on everyday micro-interventions such as short breaks, snacks, and resetting environments, which they perceived as more authentic, accessible, and effective in practice.

Taken together, these insights suggest three contributions. First, they underscore the importance of centering youth voices in esports mental well-being research and design, recognizing that adolescent well-being is deeply tied to developmental needs for recognition, belonging, and responsibility. Second, they highlight the emergent fit between teens' lived experiences and Cognitive Behavioral Theory, showing how cycles of cognition, emotion, and behavior shape resilience and vulnerability in competitive play. Finally, they point toward practical implications: effective interventions should emphasize personalization, relational trust, and micro-interventions that embed seamlessly into the rhythms of play.

By reframing mental well-being as a shared and culturally situated practice, this work advances a youth-driven perspective on esports mental health. It also opens new pathways for research and design that move beyond one-size-fits-all programs toward interventions that are relational, context sensitive, and developmentally grounded, helping adolescent players not only to cope but to thrive in the dynamic and challenging world of competitive gaming.

Acknowledgments

We extend our sincere gratitude to all of our participants and partners for their invaluable contributions. Special thanks to Katie Salen, the University of California, Irvine (UCI), the Network of Academic and Scholastic Esports Federations (NASEF), Connected Camps, the Seattle Public Library (SPL), and Pivotal Ventures for the gift.

References

[1] Callum Abbott, Matthew Watson, and Phil Birch. 2022. Perceptions of effective training practices in League of Legends: A qualitative exploration. *Journal of Electronic Gaming and Esports* 1, 1 (2022). doi:10.1123/jege.2022-0011

[2] Jenna Abrams. 2024. *How to Foster Digital Wellbeing through Youth Leadership and Voice: Announcing the Release of the Connected Wellbeing Impact Studio Case Study Series.* Retrieved August 15, 2025 from https://clalliance.org/blog/how-to-foster-digital-wellbeing-through-youth-leadership-and-voice-announcing-the-release-of-the-connected-wellbeing-impact-studio-case-study-series/

[3] Gonzalo G. Alvarez and Najib T. Ayas. 2004. The Impact of Daily Sleep Duration on Health: A Review of the Literature. *Progress in Cardiovascular Nursing* 19, 2 (February 2004), 56–59. doi:10.1111/j.0889-7204.2004.02422.x

[4] Sigal G. Barsade. 2002. The Ripple Effect: Emotional Contagion and its Influence on Group Behavior. *Administrative Science Quarterly* 47, 4 (2002), 644–675. doi:10.2307/3094912

[5] Aaron T. Beck, A. John Rush, Brian F. Shaw, Gary Emery, Robert J. DeRubeis, and Steven D. Hollon. 2024. *Cognitive therapy of depression.* Guilford Press, New York, NY, USA. https://books.google.com/books?id=k94FEQAAQBAJ

[6] Maciej Behnke, Michal Kosakowski, and Lukasz D. Kaczmarek. 2020. Social challenge and threat predict performance and cardiovascular responses during competitive video gaming. *Psychology of Sport and Exercise* 46 (2020), 101584. doi:10.1016/j.psychsport.2019.101584

[7] Nicole A. Beres, Madison Klarkowski, and Regan L. Mandryk. 2021. Under Pressure: Exploring Choke and Clutch in Competitive Video Games. *Proceedings of the ACM on Human-Computer Interaction* 5 (2021), 1–22. Issue CHI PLAY. doi:10.1145/3474666

[8] James E. Bissett, Emily Kroshus, and Stephen Hebard. 2020. Determining the role of sport coaches in promoting athlete mental health: a narrative review and Delphi approach. *BMJ Open Sport and Exercise Medicine* 6, 1 (2020), e000676. doi:10.1136/bmjsem-2019-000676

[9] Sarah-Jayne Blakemore and Kathryn L. Mills. 2014. Is Adolescence a Sensitive Period for Sociocultural Processing? *Annual Review of Psychology* 65, 1 (2014), 187–207. doi:10.1146/annurev-psych-010213-115202

[10] Arianna Boldi and Amon Rapp. 2022. Commercial video games as a resource for mental health: A systematic literature review. *Behaviour and Information Technology* 41, 12 (2022), 2654–2690. doi:10.1080/0144929X.2021.1943524

[11] Arianna Boldi and Amon Rapp. 2023. Making sense of the pandemic: Multiple functions of commercial video games during one year and a half of COVID-19 crisis. *International Journal of Human-Computer Studies* 180 (2023), 103141. doi:10.1016/j.ijhcs.2023.103141

[12] Erika Bonnevie, Magdalena M. Paczkowski, Chelsea Barth, Tyler Janzen, Ellen Wartella, and Joe Smyser. 2022. A Collaboration Between Health Care and Esports to Impact Youth Mental Health and Wellness: Evaluating the Presence of Mind Initiative. *NEJM Catalyst* 3, 6 (2022). doi:10.1056/CAT.22.0050

[13] Glenn A Bowen. 2008. Naturalistic inquiry and the saturation concept: a research note. *Qualitative Research* 8, 1 (2008), 137–152. doi:10.1177/1468794107085301

[14] Virginia Braun and Victoria Clarke. 2006. Using thematic analysis in psychology. *Qualitative Research in Psychology* 3, 2 (2006), 77–101. doi:10.1191/1478088706qp063oa

[15] Fanni Bányai, Mark D. Griffiths, Orsolya Király, and Zsolt Demetrovics. 2019. The Psychology of Esports: A Systematic Literature Review. *Journal of Gambling Studies* 35, 2 (2019), 351–365. doi:10.1007/s10899-018-9763-1

[16] Dennis Caine, Tanis Walch, and Todd Sabato. 2016. The elite young athlete: strategies to ensure physical and emotional health. *Open Access Journal of Sports Medicine* Volume 7 (2016), 99–113. doi:10.2147/OAJSM.S96821

[17] Dympna Casey and Kathy Murphy. 2009. Issues in using methodological triangulation in research. *Nurse researcher* 16, 4 (2009). doi:10.7748/nr2009.07.16.4.40.c7160

[18] Gary Chan, Yan Huo, Sarah Kelly, Janni Leung, Calvert Tisdale, and Matthew Gullo. 2022. The impact of eSports and online video gaming on lifestyle behaviours in youth: A systematic review. *Computers in Human Behavior* 126 (2022), 106974. doi:10.1016/j.chb.2021.106974

[19] Michael Wl Chee. 2015. Limitations on visual information processing in the sleep-deprived brain and their underlying mechanisms. *Current Opinion in Behavioral Sciences* 1 (2015), 56–63. doi:10.1016/j.cobeha.2014.10.003

[20] Yeonhee Cho, Eric S. Cohen, Autumn E. Freund, Jason Yip, and Jin Ha Lee. 2022. Coaching in Esports: Promoting Well-Being and Performance. In *Understanding Collegiate Esports: A Practitioner's Guide to Developing Community and Competition.* Routledge, 68–77. doi:10.4324/9781003271772-5

[21] Yeonhee Cho, Michele Newman, Caroline Pitt, Jason C. Yip, and Jin Ha Lee. 2024. You Are Tilted!: Leveraging Tabletop Gaming to Manage Tilt and Strengthen Team Dynamics in Esports. *Proceedings of the ACM on Human-Computer Interaction* 8 (2024), 1–29. Issue CHI PLAY. doi:10.1145/3677116

[22] Bruce E. Compas, Sarah S. Jaser, Alexandra H. Bettis, Kelly H. Watson, Meredith A. Gruhn, Jennifer P. Dunbar, Ellen Williams, and Jennifer C. Thigpen. 2017. Coping, emotion regulation, and psychopathology in childhood and adolescence: A meta-analysis and narrative review. *Psychological Bulletin* 143, 9 (2017), 939–991. doi:10.1037/bul0000110

[23] Amanda C. Cote. 2017. "I Can Defend Myself": Women's Strategies for Coping With Harassment While Gaming Online. *Games and Culture* 12, 2 (2017), 136–155. doi:10.1177/1555412015587603

[24] John W. Creswell and Cheryl N. Poth. 2016. *Qualitative inquiry and research design: Choosing among five approaches* (4th ed.). SAGE Publications. https://books.google.com/books?id=DLbBDQAAQBAJ

[25] Antonella Delle Fave and Marta Bassi. 2000. The quality of experience in adolescents' daily lives: Developmental perspectives. *Genetic, social, and general psychology monographs* 126, 3 (2000), 347. https://www.proquest.com/docview/231505365/fulltext/8C7DCB3C5B644E29PQ/1?accountid=14784&sourcetype=Scholarly%20Journals

[26] Ruud. J. R. Den Hartigh, L. Rens A. Meerhoff, Nico W. Van Yperen, Niklas D. Neumann, Jur J. Brauers, Wouter G. P. Frencken, Ando Emerencia, Yannick Hill, Sebastiaan Platvoet, Martin Atzmueller, Koen A. P. M. Lemmink, and Michel S. Brink. 2024. Resilience in sports: a multidisciplinary, dynamic, and personalized perspective. *International Review of Sport and Exercise Psychology* 17, 1 (2024), 564–586. doi:10.1080/1750984X.2022.2039749

[27] Halbert L. Dunn. 1959. High-Level Wellness for Man and Society. *American Journal of Public Health and the Nations Health* 49, 6 (1959), 786–792. doi:10.2105/AJPH.49.6.786

[28] Mary Ellen Flannery. 2021. *Esports See Explosive Growth in U.S. High Schools textbar NEA.* Retrieved 2025-7-30 from https://www.nea.org/nea-today/all-news-articles/esports-see-explosive-growth-us-high-schools

[29] Guo Freeman and Donghee Yvette Wohn. 2019. Understanding eSports Team Formation and Coordination. *Computer Supported Cooperative Work (CSCW)* 28, 1 (2019), 95–126. doi:10.1007/s10606-017-9299-4

[30] Aaron Gifford. 2024. *Scholastic Esports Surging in Popularity Nationwide, Globally.* Retrieved 2025-7-30 from https://www.govtech.com/education/k-12/school-esports-thriving-in-the-united-states-and-globally

[31] Brian P Godor. 2025. Cultivating Resilience in Youth: Assessing the Psychological Benefits of Sport-Based Development Programs. *Journal of Sport for Development* 13, 1 (2025). https://jsfd.org/2025/06/03/cultivating-resilience-in-youth-assessing-the-psychological-benefits-of-sport-based-development-programs/

[32] Namni Goel. 2017. Neurobehavioral Effects and Biomarkers of Sleep Loss in Healthy Adults. *Current Neurology and Neuroscience Reports* 17, 11 (2017), 89. doi:10.1007/s11910-017-0799-x

[33] Chris G. Harwood, Sam N. Thrower, Matthew J. Slater, Faye F. Didymus, and Lucy Frearson. 2019. Advancing Our Understanding of Psychological Stress and Coping Among Parents in Organized Youth Sport. *Frontiers in Psychology* 10 (2019), 1600. doi:10.3389/fpsyg.2019.01600

[34] Clara E Hill, Sarah Knox, Barbara J Thompson, Elizabeth Nutt Williams, Shirley A Hess, and Nicholas Ladany. 2005. Consensual qualitative research: An update. *Journal of counseling psychology* 52, 2 (2005), 196. doi:10.1037/0022-0167.52.2.196

[35] Clara E Hill, Barbara J Thompson, and Elizabeth Nutt Williams. 1997. A guide to conducting consensual qualitative research. *The counseling psychologist* 25, 4 (1997), 517–572. doi:10.1177/0011000097254001

[36] Daniel Himmelstein, Yitong Liu, and Jamie L. Shapiro. 2017. An exploration of mental skills among competitive league of legend players. *International Journal of Gaming and Computer-Mediated Simulations (IJGCMS)* 9, 2 (2017), 1–21. doi:10.4018/IJGCMS.2017040101

[37] Stefan G. Hofmann, Anu Asnaani, Imke J. J. Vonk, Alice T. Sawyer, and Angela Fang. 2012. The Efficacy of Cognitive Behavioral Therapy: A Review of Meta-analyses. *Cognitive Therapy and Research* 36, 5 (2012), 427–440. doi:10.1007/s10608-012-9476-1

[38] Grayson N. Holmbeck, Kathleen O'Mahar, Maria Abad, Craig Colder, and Anthony Updegrove. 2006. *Cognitive-Behavioral Therapy with Adolescents: Guides from Developmental Psychology* (3rd ed.). The Guilford Press, New York, NY, USA, 419–464. https://psycnet.apa.org/record/2006-12734-012

[39] Philip C. Kendall. 1993. Cognitive-behavioral therapies with youth: Guiding theory, current status, and emerging developments. *Journal of Consulting and clinical psychology* 61, 2 (1993), 235–247. doi:10.1037/0022-006X.61.2.235

[40] Memduh Kocadağ. 2020. An eSport research: psychological well-being differences of teenagers in terms of several variables. *Psychology Research on Education and Social Sciences* 1, 1 (2020), 31–39. https://dergipark.org.tr/en/pub/press/issue/54258/729656

[41] Yubo Kou and Xinning Gui. 2020. Emotion Regulation in eSports Gaming: A Qualitative Study of League of Legends. *Proceedings of the ACM on Human-Computer Interaction* 4 (2020), 1–25. Issue CSCW2. doi:10.1145/3415229

[42] Rachel Kowert. 2020. Dark Participation in Games. *Frontiers in Psychology* 11 (2020), 598947. doi:10.3389/fpsyg.2020.598947

[43] Kenneth Kresina. 2024. *An Exploration of Team Cohesion in Collegiate Esports Contexts.* Master's thesis. doi:10.30707/ETD2024.2024061806394968342 8.999954

[44] Daria Joanna Kuss and Mark D. Griffiths. 2012. Internet Gaming Addiction: A Systematic Review of Empirical Research. *International Journal of Mental Health and Addiction* 10, 2 (2012), 278–296. doi:10.1007/s11469-011-9318-5

[45] Oliver Leis, Benjamin T. Sharpe, Vincent Pelikan, Julian Fritsch, Adam R. Nicholls, and Dylan Poulus. 2024. Stressors and coping strategies in esports: a systematic review. *International Review of Sport and Exercise Psychology* (2024), 1–31. doi:10.1080/1750984X.2024.2386528

[46] Sonia Livingstone. 2016. *A framework for researching Global Kids Online: understanding children's well-being and rights in the digital age.* Technical Report. London School of Economics and Political Science. https://eprints.lse.ac.uk/71254

[47] Cassandra J. Lowe, Adrian Safati, and Peter A. Hall. 2017. The neurocognitive consequences of sleep restriction: A meta-analytic review. *Neuroscience and Biobehavioral Reviews* 80 (2017), 586–604. doi:10.1016/j.neubiorev.2017.07.010

[48] Bernadette Mazurek Melnyk and Susan Neale. 2018. Physical Wellness: A Must for Sustained Energy. *American Nurse Today* 13, 1 (2018), 10–11. https://www.myamericannurse.com/physical-wellness-sustained-energy/

[49] Vimala Venugopal Muthuswamy and P. Chitramani. 2023. Fostering Mental Wellness and Team Success: The Impact of Coach-Athlete Relationship and Sports Psychological Safety. *Archives of Clinical Psychiatry* 50, 5 (2023). https://archivespsy.com/menu-script/index.php/ACF/article/view/2223

[50] North America Scholastic Esports Federation (NASEF). 2025. *Healthy Gaming.* Retrieved 2025-8-25 from https://www.nasef.org/healthy-gaming

[51] World Health Organization. 2025. *Mental health.* Retrieved 2025-6-20 from https://www.who.int/news-room/fact-sheets/detail/mental-health-strengthening-our-response

[52] Simone Kate Orlowski, Sharon Lawn, Anthony Venning, Megan Winsall, Gabrielle M. Jones, Kaisha Wyld, Raechel A. Damarell, Gaston Antezana, Geoffrey Schrader, and David Smith. 2015. Participatory research as one piece of the puzzle: a systematic review of consumer involvement in design of technology-based youth mental health and well-being interventions. *JMIR human factors* 2, 2 (2015), e4361. doi:10.2196/humanfactors.4361

[53] Kieran O'Gorman, Ruben Benakovic, and Krista Fisher. 2024. *Game Boys: Gaming, Esports, and Young Men's Mental Health.* Springer Nature Switzerland, 93–129. doi:10.1007/978-3-031-64053-7_4

[54] Dylan Poulus, Mitchell Nicholson, Emmanuel Obine, Mason Drew, Krista Fisher, Stewart Vella, and Benjamin Sharpe. 2024. The State of Mental Health Research in Esports: A Scoping Review. *Preprints* (2024). doi:10.31234/osf.io/sxr67

[55] Lisa Raith, Julie Bignill, Vasileios Stavropoulos, Prudence Millear, Andrew Allen, Helen M. Stallman, Jonathan Mason, Tamara De Regt, Andrew Wood, and Lee Kannis-Dymand. 2021. Massively Multiplayer Online Games and Well-Being: A Systematic Literature Review. *Frontiers in Psychology* 12 (2021), 698799. doi:10.3389/fpsyg.2021.698799

[56] Egil Trasti Rogstad. 2022. Gender in eSports research: a literature review. *European Journal for Sport and Society* 19, 3 (July 2022), 195–213. doi:10.1080/16138171.2021.1930941

[57] Renata Maria Silva Santos, Camila Guimarães Mendes, Guilherme Yanq Sen Bressani, Samara De Alcantara Ventura, Yago Jean De Almeida Nogueira, Débora Marques De Miranda, and Marco Aurélio Romano-Silva. 2023. The associations between screen time and mental health in adolescents: a systematic review. *BMC Psychology* 11, 1 (2023), 127. doi:10.1186/s40359-023-01166-7

[58] David P. Schary, Seth E. Jenny, and Aaron Koshy. 2022. Leveling up esports health: Current status and call to action. *International Journal of Esports* 3, 3 (2022). https://www.ijesports.org/article/70/html

[59] Benjamin T. Sharpe and Phil D. J. Birch. 2024. Psychology of Esports Special Issue: A Catalyst for Change. *Journal of Electronic Gaming and Esports* 2, 1 (2024), jege.2024–0058. doi:10.1123/jege.2024-0058

[60] Hok-Lai Shum, Chin-Hei Lee, and Johnson Chun-Sing Cheung. 2021. Should Esports Be a Co-Curricular Activity in School? *Children and Schools* 43, 1 (2021), 61–63. doi:10.1093/cs/cdaa028

[61] Jeffrey Gottfried Sidoti and Olivia. 2024. *Teens and Video Games Today.* Retrieved 2025-9-1 from https://www.pewresearch.org/internet/2024/05/09/teens-and-video-games-today/

[62] Matthew Smith, Benjamin Sharpe, Atheeshaan Arumuham, and Phil Birch. 2022. Examining the Predictors of Mental Ill Health in Esport Competitors. *Healthcare* 10, 4 (2022), 626. doi:10.3390/healthcare10040626

[63] Clay Spinuzzi. 2005. The methodology of participatory design. *Technical communication* 52, 2 (2005), 163–174. https://www.ingentaconnect.com/content/stc/tc/2005/00000052/00000002/art00005

[64] Laurence Steinberg and Amanda Sheffield Morris. 2001. Adolescent Development. *Annual Review of Psychology* 52, 1 (2001), 83–110. doi:10.1146/annurev.psych.52.1.83

[65] Katie Salen Tekinbaş and Jin Ha Lee. 2021. *Exploring Esports as Context to Support Youth Wellbeing.* Retrieved August 5, 2025 from https://connectedlearning.uci.edu/blog/exploring-esports-as-context-to-support-youth-wellbeing/

[66] Gershon Tenenbaum and Robert C. Eklund. 2007. *Handbook of Sport Psychology.* John Wiley & Sons, Hoboken, NJ, USA. https://onlinelibrary.wiley.com/doi/book/10.1002/9781118270011

[67] Take This. 2024. *Press Release: Take This Launches Mentorship and Career Accelerate Fellowship Program Funded by Riot Games.* Retrieved August 29, 2025 from https://www.takethis.org/2024/05/accelerate-announcement/

[68] Michael G. Trotter, Tristan J. Coulter, Paul A. Davis, Dylan R. Poulus, and Remco Polman. 2022. Examining the Impact of School Esports Program Participation on Student Health and Psychological Development. *Frontiers in Psychology* 12 (2022), 807341. doi:10.3389/fpsyg.2021.807341

[69] Selen Türkay, Jessica Formosa, Sonam Adinolf, Robert Cuthbert, and Roger Altizer. 2020. See No Evil, Hear No Evil, Speak No Evil: How Collegiate Players Define, Experience and Cope with Toxicity. In *Proceedings of the 2020 CHI Conference on Human Factors in Computing Systems (CHI '20).* Association for Computing Machinery, 1–13. doi:10.1145/3313831.3376191

[70] Christopher R. D. Wagstaff. 2016. Resilience in sport: a critical review of psychological processes, sociocultural influences, and organizational dynamics. In *The Organizational Psychology of Sport* (0 ed.). Routledge, 138–168. doi:10.4324/9781315666532-17

[71] Greg Walsh, Elizabeth Foss, Jason Yip, and Allison Druin. 2013. FACIT PD: a framework for analysis and creation of intergenerational techniques for participatory design. In *Proceedings of the SIGCHI Conference on Human Factors in Computing Systems (CHI '13).* Association for Computing Machinery, 2893–2902. doi:10.1145/2470654.2481400

[72] Minerva Wu, Je Seok Lee, and Constance Steinkuehler. 2021. Understanding Tilt in Esports: A Study on Young League of Legends Players. In *Proceedings of the 2021 CHI Conference on Human Factors in Computing Systems (CHI '21).* Association for Computing Machinery, 1–9. doi:10.1145/3411764.3445143

[73] Keyi Yin, Yahua Zi, Wei Zhuang, Yang Gao, Yao Tong, Linjie Song, and Yu Liu. 2020. Linking Esports to health risks and benefits: Current knowledge and future research needs. *Journal of Sport and Health Science* 9, 6 (2020), 485–488. doi:10.1016/j.jshs.2020.04.006

[74] Jason C. Yip, Frances Marie Tabio Ello, Fumi Tsukiyama, Atharv Wairagade, and June Ahn. 2023. Money shouldn't be money : An Examination of Financial Literacy and Technology for Children Through Co-Design. In *Proceedings of the 22nd Annual ACM Interaction Design and Children Conference* (Chicago IL USA). ACM, 82–93. doi:10.1145/3585088.3589355

[75] Jason C. Yip, Kiley Sobel, Xin Gao, Allison Marie Hishikawa, Alexis Lim, Laura Meng, Romaine Flor Ofiana, Justin Park, and Alexis Hiniker. 2019. Laughing is Scary, but Farting is Cute: A Conceptual Model of Children's Perspectives of Creepy Technologies. In *Proceedings of the 2019 CHI Conference on Human Factors in Computing Systems (FDG '19)*. ACM, 1–15. doi:10.1145/3290605.3300303

[76] Jason C. Yip, Kiley Sobel, Caroline Pitt, Kung Jin Lee, Sijin Chen, Kari Nasu, and Laura R. Pina. 2017. Examining Adult-Child Interactions in Intergenerational Participatory Design. In *Proceedings of the 2017 CHI Conference on Human Factors in Computing Systems (CHI '17)*. Association for Computing Machinery, 5742–5754. doi:10.1145/3025453.3025787

[77] Nur Hafizah Yusoff and Yuza Haiqal Mohd Yunus. 2021. Male Dominant Sport: The Challenges of Esports Female Athletes. *Pertanika Journal of Social Sciences and Humanities* 29, 2 (June 2021). doi:10.47836/pjssh.29.2.35

[78] Zinan Zhang, Sam Moradzadeh, Andrew Woan, and Yubo Kou. 2024. Toxicity by Game Design: How Players Perceive the Influence of Game Design on Toxicity. *Proceedings of the ACM on Human-Computer Interaction* 8 (2024), 1–31. Issue CHI PLAY. doi:10.1145/3677110

A Attendance of Participants

Role	Name (Pseudonym)	Age	Gender	PD1	PD2	PD3	PD4	PD5	PD6	PD7	PD8	PD9
Teenager Esports Players	Ethan (P1)	15	M	■	■	■	■	■	■	■	■	■
	Jayden (P2)	14	M	■	■	■	■	■	■	■	■	■
	Noah (P3)	15	M		■	■		■	■	■	■	
	Lucas (P4)	15	M	■	■	■	■	■	■	■		
	Amir (P5)	15	M	■	■	■	■	■	■	■	■	■
	Kai (P6)	15	M		■		■	■	■	■	■	
	Robin (P7)	15	M				■	■	■	■	■	■
	Anna (P8)	15	F						■	■	■	■
	Liam (P9)	15	M						■	■	■	■
	Miles (P10)	15	M						■	■	■	
	Aaron (P11)	15	M						■	■	■	■
	Allon (P12)	14	M						■	■	■	■
	Chris (P13)	15	M						■	■	■	
	Derek (P14)	15	M						■	■	■	
	Adam (P15)	14	M								■	■
	Oscar (P16)	14	M									■
	Gary (P17)	14	M								■	■
Collegiate Esports Coaches	Zoe	26	F		■	■			■	■	■	■
	Andy	26	M		■	■	■	■	■	■	■	■
	Kevin	22	M		■	■	■	■	■	■	■	■
	David	21	M		■	■	■	■	■	■	■	
	Lily	24	F						■	■	■	■
	Dakota	24	M						■	■	■	■
	Sofia	21	F									■
Youth Esports Program Coordinator	Riley	Adult	M	■		■	■	■	■	■	■	■
	Skyler	Adult	M	■	■	■	■	■	■			
	Isaiah	Adult	M	■	■	■	■	■	■	■	■	■
	Aiden	Adult	M	■	■	■	■	■	■	■	■	
	Ryan	Adult	M						■		■	
Researchers	Hana	Adult	F	■	■	■	■	■	■	■	■	■
	Taylor	Adult	M	■	■	■	■	■	■	■	■	■
	Jordan	Adult	M	■	■	■	■	■	■	■	■	■
	Alex	Adult	M	■	■	■	■	■	■	■	■	■
	Bella	Adult	F	■	■	■	■	■	■	■	■	■

Figure 7: Participant attendance across nine participatory design sessions.

B Summary of Participatory Design 4

B.1 Visualization from PD4

The following figure illustrates the types of toxicity identified by participants during PD4. The visualization was co-created by participants as part of the design activity.

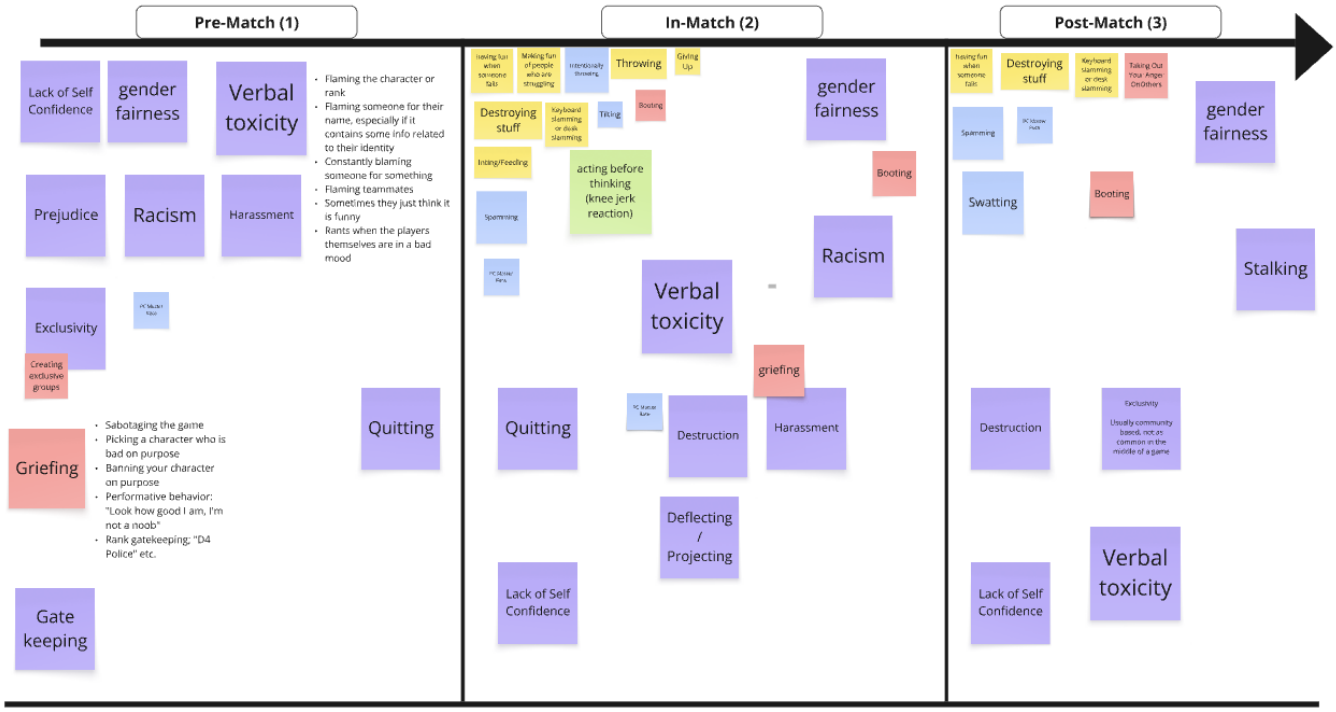


Figure 8: Participant-created visualization of toxicity types by match phase.

B.2 Readable Table Representation of PD4

The following table translates the participant-generated visualization into a structured, readable format for clarity and reference. It categorizes toxicity types by match phase and provides concrete examples of behaviors.

Table 5: Structured representation of toxic behaviors by match phase.

Match phase	Toxicity category	Example behaviors
Pre-Match	Verbal toxicity	Flaming character or rank; blaming others in lobby; ranting when in a bad mood
	Racism / Prejudice	Racist remarks; prejudice based on race or ethnicity
	Gender fairness	Sexist comments; "not good enough because female"; misogyny
	Exclusivity / Gatekeeping	Creating exclusive groups; rank gatekeeping ("D4 police"); console vs. PC elitism
	Griefing (pre-setup)	Picking or banning characters on purpose to sabotage; performative bragging
	Lack of self-confidence	Expressing low confidence before match; self-deprecation
	Harassment (pre-game)	DMs or lobby harassment; name calling before queue
In-Match	Verbal toxicity	Flaming teammates; yelling/insults; spam pinging; toxic "jokes"
	Racism	Racial slurs during play; targeted abuse
	Gender fairness	Sexist remarks while playing; gender bias in team roles
	Throwing / Inting	Intentionally dying; feeding; "giving up" plays
	Quitting / AFK	Leaving mid-game; abandoning the team
	Griefing (in-game)	Blocking or trolling allies; holding lobbies hostage
	Destruction	Keyboard slamming; desk slamming; smashing things
	Deflecting / Projecting	Blaming others for own mistakes; tilting and passing blame
	Harassment	Targeted harassment; dog-piling; gang-up behavior
	Booting (in-game)	Forcing players offline by flooding their network
Post-Match	Verbal toxicity	Post-game flaming; trash talking; taking anger out on others
	Swatting	Swatting threats or posting personal information
	Stalking	Following or harassing across matches or platforms
	Destruction	Smashing or breaking items after loss
	Booting / Spamming	Post-match booting; spam messages
	Exclusivity narratives	Public shaming; exclusion based on rank or identity