

Experience Report

Assessment of adolescent obesity from the perspective of the Kawa (River) Model: a case report

Avaliação da obesidade em adolescentes sob a perspectiva do Modelo Kawa (Rio): um relato de caso

Ayşe Yalçın^a , Hatice Abaoğlu^a 

^aHacettepe University, Ankara, Turkey.

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Abstract

Introduction: Adolescent obesity adversely impacts participation in everyday life activities and limits occupational performance. Factors such as sedentary lifestyle, irregular sleep patterns, and social isolation further challenge adolescents' ability to maintain a healthy and balanced life. **Objective:** This case report aims to explore the barriers and strengths experienced by an adolescent with obesity by examining physical, psychological, and environmental factors through the lens of the Kawa Model. **Method:** This single-case study explored the occupational participation of a 15-year-old adolescent diagnosed with obesity using the Kawa Model. Through the model's process, the participant created a river diagram representing her life flow, which facilitated the identification of personal strengths, challenges, and environmental influences affecting her engagement in everyday activities. **Results:** The findings revealed imbalances in activities of daily living, poor sleep quality, and limited social skills. The Kawa Model analysis identified key factors affecting the participant's life flow, including time-management difficulties, disrupted sleep patterns, reduced social engagement, family conflict, and peer bullying. **Conclusion:** This case report demonstrates how the Kawa Model can be applied to gain a holistic, client-centered understanding of the environmental, social, and personal factors influencing occupational engagement in an adolescent diagnosed with obesity. Although the findings reflect the experience of a single participant, they provide insights that may help inform individualized therapeutic planning in similar contexts.

Keywords: Adolescent, Pediatric Obesity, Case Reports, Occupational Therapy.

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Resumo

Introdução: A obesidade na adolescência impacta negativamente a participação em atividades do cotidiano e limita o desempenho ocupacional. Fatores como estilo de vida sedentário, padrões de sono irregulares e isolamento social ampliam os desafios para que adolescentes mantenham vida saudável e equilibrada. **Objetivo:** Este relato de caso objetivou explorar as barreiras e as potencialidades vivenciadas por um adolescente com obesidade, examinando fatores físicos, psicológicos e ambientais à luz do Modelo Kawa. **Método:** Este estudo de caso único investigou a participação ocupacional de um adolescente de 15 anos com diagnóstico de obesidade, utilizando o Modelo Kawa. No processo do modelo, a participante elaborou um diagrama do rio que representava o fluxo de sua vida, o que facilitou a identificação de potencialidades pessoais, desafios e influências ambientais que afetavam seu engajamento em atividades do cotidiano. **Resultados:** Os achados revelaram desequilíbrios nas atividades de vida diária, baixa qualidade do sono e habilidades sociais limitadas. A análise por meio do Modelo Kawa identificou fatores-chave que afetavam o fluxo de vida da participante, incluindo dificuldades de gerenciamento do tempo, padrões de sono interrompidos, redução do engajamento social, conflitos familiares e *bullying* por pares. **Conclusão:** Este relato demonstra como o Modelo Kawa pode ser aplicado para obter compreensão holística e centrada no cliente dos fatores ambientais, sociais e pessoais que influenciam o engajamento ocupacional de adolescente com diagnóstico de obesidade. Embora os achados reflitam a experiência de uma única participante, oferecem *insights* que podem contribuir para o planejamento terapêutico individualizado em contextos semelhantes.

Palavras-chave: Adolescente, Obesidade Pediátrica, Relatos de Casos, Terapia Ocupacional.

Introduction

The adolescence period represents one of the most critical phases of individual growth and development (Dahl et al., 2018). During adolescence, identity development also begins and this process is dynamic, influenced not only by biological and psychological factors but also by social and cultural contexts (Branje et al., 2021). This period is marked by substantial neurobiological remodeling and brain maturation. The neurodevelopmental changes characteristic of adolescence, coupled with increasing independence and social engagement, act as significant determinants of both health-promoting behaviors and health-related risks (Balvin & Banati, 2017). As a consequence of the changes experienced during adolescence, the emergence and progression of obesity are influenced by a combination of biological factors such as genetic predisposition and external factors, including eating habits, physical activity levels and environmental conditions (World Health Organization, 2016). According to the World Health Organization, the prevalence of obesity among adolescents worldwide ranges from 10% to 20% and has quadrupled over the past 30 years (World Health Organization, 2022). Projections indicate that childhood and adolescent obesity will increase dramatically by 2050, imposing a substantial burden on global health systems (Kerr et al., 2025). These trends underscore the urgent need to reevaluate and adapt nutrition policies and public health interventions, particularly within low- and middle-income countries (Escher et al., 2024).

The increasing prevalence of obesity presents an escalating challenge to global health systems and constitutes a significant threat to healthcare services (Sweis, 2024). Current evidence suggests that health systems are inadequate in meeting the needs of contemporary society and are ill-prepared to address future demands (Wolfenden et al., 2019). To effectively manage obesity, health systems must undergo restructuring to better serve affected individuals. However, this process faces numerous barriers, including limited medical infrastructure, socio-cultural factors, competing health priorities, and a shortage of clinicians' time and specialized skills (Martinez et al., 2017). Moreover, only a limited number of medical schools worldwide incorporate training in the assessment and management of obesity, and standardized competence frameworks in this domain have only recently been established (Elhag & El Ansari, 2025).

Considering that obesity is influenced not only by biological and health systems-related factors but also by individuals' daily life styles and environmental conditions, it is of great importance to examine the primary factors that increase the risk of obesity in adolescents (Malacarne et al., 2022). Several determinants such as dietary habits, physical environment and educational policies contribute to this risk (Haghjoo et al., 2022). In particular, a sedentary lifestyle and excessive screen use are strongly associated with weight gain and obesity (Ekanayake et al., 2023). Preferences for passive transportation, prolonged periods of inactivity during school days, and engagement in screen-oriented activities are among the main factors that promote body fat accumulation in young people leading sedentary lives. Increased use of digital devices during weekends further exacerbates this situation (Cabanas-Sánchez et al., 2019; Hadianfard et al., 2021). Extended screen time often results in adolescents skipping meals and shifting their eating behaviors toward unhealthy snacks (Rocha et al., 2021). When combined with reduced physical activity, these habits significantly heighten the risk of obesity. Additionally, prolonged screen use adversely affects sleep quality by suppressing melatonin production and reducing sleep duration (Moitra et al., 2021). Insufficient sleep can lead to hormonal imbalances, increase the consumption of processed foods and serve as a significant risk factor in the development of obesity (Oliveira et al., 2023).

Obesity is a multifactorial condition involving biological, developmental, behavioral, genetic, and environmental determinants, which contribute to its complexity (Qasim et al., 2018). Childhood obesity, influenced by numerous factors, is increasingly associated with comorbidities such as insulin resistance, diabetes, dyslipidemia, hypertension, and sleep apnea (Kumar & Kelly, 2017). These health conditions substantially elevate the risk of cardiovascular disease and premature mortality (Drozd et al., 2021), with risks often intensifying as individuals approach adulthood (Skinner et al., 2015). Beyond physical health concerns, individuals with obesity are more prone to psychological issues, including depression, emotional and behavioral disorders, and low self-esteem, which adversely affect their overall quality of life (Haqq et al., 2021; Langford et al., 2022). Furthermore, adolescents struggling with obesity often develop a pessimistic outlook on life and may contend with internet addiction (Rankin et al., 2016; Rocka et al., 2022). The stigma associated with obesity can lead to negative social experiences such as teasing or derogatory name-calling from their peers, family and social circles (Warnick et al., 2022). This blame and social exclusion can intensify feelings of shame and isolation, further impacting mental well-being and a perpetuating a cycle of stigma (Roberts et al., 2021).

Understanding the experiences of adolescents with obesity is crucial for assessing their challenges and developing effective interventions (Farrell et al., 2021). Many young individuals are unaware of their overweight or obese status or are unconcerned about its health implications (Halford et al., 2024). Nevertheless, subjective experiences highlight that motivation and psychosocial support are vital components of weight management (Sides et al., 2024). Adolescents report facing numerous social, environmental and psychological barriers to maintaining weight loss (Kebbe et al., 2018). Studies indicate that factors such as feelings of inadequacy during physical activities, discomfort with visibility, and peer bullying negatively influence their participation in physical exercise (Skogen & Høydal, 2021; Yourell & Doty, 2022). Additionally, they note that addressing physical needs, improving mental health and coping with social pressures significantly influence their eating behaviors (Wang et al., 2022).

Obese individuals often experience significant disparities between their desired and actual levels of activity. Obesity can impose limitations on participation in work and voluntary activities; as a consequence, increased leisure time may be associated with boredom and inactivity (Richards et al., 2024). Factors such as poor time management, lack of motivation and social withdrawal can negatively influence participation in activities of daily living among obese individuals (Sorrow et al., 2021). Occupational imbalance and inactivity associated with obesity may adversely affect mental health and overall life satisfaction. Occupational therapy models emphasize the individual's subjective experiences (Jessen-Winge et al., 2023). Evaluations of individuals with obesity have revealed difficulties in various occupations such as shopping for clothes, establishing regular meal routines, and attending swimming pools (Nossun et al., 2018). Occupational therapists possess a robust theoretical foundation for examining individuals' lifestyles and occupations holistically. Through holistic assessments, occupational therapists highlight the complex nature of obesity treatment, aiming to improve quality of life by identifying and addressing the unique challenges faced by each individual based on their lived experiences (Christensen et al., 2022; Jessen-Winge et al., 2023).

The Kawa Model offers a comprehensive, experience-based framework frequently utilized by occupational therapists during assessment processes, conceptualizing an individual's life through the metaphor of a river (Iwama et al., 2009). Developed by occupational therapist Dr. Michael Iwama, this model encourages collaborative understanding by addressing the individual's conditions, challenges and life dynamics within a holistic context (Iwama, 2006). Key metaphors include water (representing the overall life process and health), river walls and bottom (symbolizing ecological factors such as family, social environment and physical spaces), rocks (signifying obstacles and stressors) and driftwood (reflecting personal characteristics, values, skills, and life experiences). The flow of water indicates life fluidity and changes, while the river's physical boundaries and obstacles help identify factors that facilitate or hinder individual progress. The model guides therapeutic intervention by assessing both difficulties and strengths across past, present and future perspectives, thereby fostering a nuanced understanding the individual's life course and informing strategies to promote balance and well-being (Ober et al., 2022; Teoh & Iwama, 2015).

The Kawa Model has been applied across diverse occupational therapy contexts, demonstrating its versatility and effectiveness. For example, it has shown promise in facilitating behavioral change among individuals with substance use disorders by enhancing motivation and self-reflection (Hsiao et al., 2024). Additionally, it serves as a valuable reflective tool in occupational therapy education, helping students develop self-awareness, communication skills, and cultural responsiveness (Brown et al., 2023; Naidoo et al., 2023). The model has also been employed as a team-building intervention in acute care rehabilitation settings, improving communication, and collaborative problem-solving among interdisciplinary teams (Ober & Lape, 2019). A case study was conducted with an adolescent who had suffered a stroke, using the Kawa Model as an effective tool for self-reflection and assessment. This approach helped to understand the individual's life context and environmental factors, contributing to a client-centered and holistic rehabilitation process (Tan & Jiang, 2020). Despite its growing utilization, there remains a notable gap in the literature regarding its application with an adolescent affected by obesity. This case report aims to explore the barriers and strengths experienced by an adolescent with obesity by examining physical, psychological, and environmental factors through the lens of the Kawa Model. This integrative approach facilitates a comprehensive understanding of the biological, environmental and psychosocial dimensions of obesity, ultimately contributing to the development of tailored intervention strategies that address this complex condition.

Methods

This study employed a single-case report design to explore challenges and strengths in daily life of an adolescent with obesity. The primary objective was to apply the Kawa Model as an analytical framework to comprehensively understand the participant's occupational performance within her social and physical environments. The single-case report methodology allows for an in-depth examination of an individual's lived experiences within their distinct personal, social, and environmental contexts (Răbu & Binder, 2025). Single-case designs are particularly useful in occupational therapy research when the aim is to understand complex, individualized patterns of occupational performance rather than to generalize findings across populations (Lane et al., 2017). This methodological approach is inherently compatible with the principles of the Kawa Model, which emphasizes person-centered narratives, contextual influences, and the subjective meanings attributed to daily activities. By integrating the single-case design with the Kawa Model, this study aimed to generate a holistic, culturally sensitive understanding of the participant's occupational experiences, thereby contributing to personalized intervention strategies and a deeper insight into the interplay between individual agency and environmental factors.

The participant was recruited through self-referral after attending an occupational therapy awareness event organized by the research at a local high school in Ankara, Turkey. During the event, the adolescent voluntarily expressed interest in receiving an occupational therapy support to address her challenges and improve her daily functioning. Written informed consent was obtained from both the participant and her parent (as her legal guardian) prior to data collection. The study was conducted at the occupational therapy clinic at Hacettepe University, following ethical approval granted by the institutional review board (Approval Code: SBF 25/035).

Occupational therapy assessments

Data were collected through semi-structured interview and clinical observation led by an occupational therapist (first author), who applied the Kawa Model as the primary assessment framework. In this study, both drawing and qualitative interview techniques derived from the Kawa Model were utilized within a comprehensive, holistic approach as primary data collection methods. The drawings served as a tangible foundation, enabling the participant to visually depict her life flow, obstacles, and resources, thereby facilitating a concrete understanding of her experiential landscape. Complementarily, semi-structured interviews provided insight into the meanings, emotions, and contextual factors underpinning this visual representation.

The Kawa Model (Teoh & Iwama, 2015) provided a culturally sensitive and holistic framework, allowing the participant to map her life context using the river metaphor, where rocks represented obstacles, driftwood represented personal strengths and resources, and the riverbanks shaped her social and physical environment. After being introduced to the key constructs and metaphorical illustrations of the Kawa Model, the participant was asked to draw her personal river to represent her life. Initially, the participant had difficulty understanding the task, therefore the researcher provided an example river drawing to clarify the process. With this support, the participant created her own river drawing, which enabled an in-depth exploration of the challenges (rocks), and support mechanisms (driftwood) present in her daily life. To protect the participant's privacy, all personal names mentioned during the interview including those of classmates, teachers, and online gaming friends have been anonymized in the drawings and transcripts. The authors had no prior therapeutic relationship with the participant before data collection. The interview lasted approximately 90 minutes and provided comprehensive insights into the participant's occupational profile, including her daily functioning, physical health and psychosocial context.

Data analysis

Participant's drawings served as an interpretative guide, shaping the trajectory of the interview process. While the drawings provided a static visualization of the participant's current state, the interview sessions delved into the underlying dynamics, such as cause-and-effect relationships and the experiential depth embedded within the visual representations. Given the flexible and interpretive nature of the Kawa Model, the flow of the interviews was directed by the river metaphors present in the participant's drawings, rather than following a predetermined, rigid procedure (Iwama, 2006).

A deductive analytical approach was adopted to systematically interpret the data. The following steps were implemented in accordance with established qualitative analysis protocols (Assarroudi et al., 2018):

- **Data Integration:** The interview transcripts and the visual drawings were analyzed as an integrated unit. The drawings offered a concrete, visual dataset that encapsulated abstract life concepts, while the interview narratives provided contextual explanations and elaborations of these visuals.
- **Categorization and Mapping:** Instead of traditional coding methods, the participant's verbal statements and visual depictions were categorized under the four principal components of the Kawa Model ; Water, Rocks, Driftwood, and River Wall. This classification facilitated a structured understanding aligned with the model's metaphors.

- **Clinical Interpretation:** Descriptions articulated by the participant as “problems” or “experiences” were translated into the metaphoric constructs of the Kawa Model through collaborative interpretation between the therapist and the participant. This process enabled a nuanced understanding of the participant’s occupational flow and contextual influences.

Through this analytical process, raw data were transformed and reorganized within the framework of the Kawa Model, rendering visible the “spaces” within the individual’s life flow and highlighting areas of challenge and strength. This approach fostered a holistic and culturally sensitive understanding of the participant’s occupational experiences.

Participant

The participant in this case report was a 15-year-old female adolescent attending a local secondary school, living at home with her parents and younger sibling. With a body mass index (BMI) of 32.4 kg/m², she met the World Health Organization criteria for obesity in adolescents (World Health Organization, 2007). She had no formal medical diagnosis but reported a one-week hospitalization due to iron deficiency approximately three months prior to the assessment, after which she intermittently used iron supplements as prescribed.

She had previously attempted to manage her weight through dietary changes and psychological support; however, these efforts were discontinued. About two years prior, she had consulted two psychologists, both adopted family-centered approaches, that reportedly increased familial tension, leading to termination of services. She also received dietary counseling during the same period but was unable to adhere to nutritional recommendations. Her current eating patterns were described irregular, characterized by frequent skipping of breakfast, snacking at school, eating primarily alone in the evenings, and engaging in emotional eating behaviors such as consuming sweets when experiencing anger or sadness.

The participant was independent in basic activities of daily living, including dressing and personal hygiene, but did not participate in household chores. She reported minimal physical activity, spending most of her time in her room engaged in online gaming. She commuted to school by bus, did not engage in any structured physical exercise, or recreational sports, and avoided school-related social activities. She described a longstanding history of peer bullying dating back to primary school, predominantly related to her weight, which had negatively impacted her attitude toward school and reduced her social engagement.

During interviews with the participant’s family, several challenges regarding their interactions related to weight management emerged. The family reported that they encouraged their daughter to adopt healthier eating habits by inviting her to eat at the table and offering to share nutritious foods, such as vegetables. However, the participant frequently rejected these suggestions and preferred to consume processed, ready-made foods alone in her room.

The participant often stays up late playing video games and eating junk food, which results in her attending school without having slept at all. She tries to meet her sleep needs during school hours. When it comes to her academic performance, she shows a strong interest in English classes and is relatively successful in that subject. However, in other subjects, she is reported to have low motivation, frequently falls asleep in class, and struggles to keep up with the lessons. At the time of assessment, she was not following any specific dietary or exercise regimen. Her native language was Turkish, and she resided in a Turkish-speaking environment, ensuring full cultural and linguistic congruence with her surroundings.

Results

Figure 1 illustrates the participant's river drawing developed through the Kawa Model interview. To ensure confidentiality and adhere to ethical standards, all personal identifiers including names of classmates, teachers, online friends, and siblings have been anonymized and replaced with general descriptors.

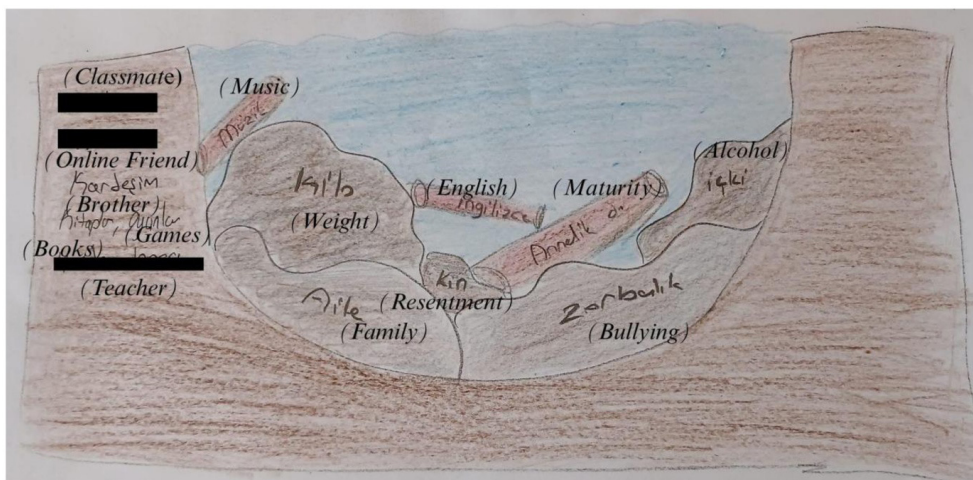


Figure 1. Participant's river drawing based on the Kawa Model interview. (Personal identifiers have been anonymized to protect confidentiality and ensure ethical compliance).

The following Table 1 summarizes the analysis of the participant's life experiences conducted through the lens of the Kawa Model, providing an in-depth understanding of her occupational challenges and strengths.

The Kawa Model analysis identified significant barriers and facilitators influencing the participant's daily life. While online gaming and dietary habits function as primary coping mechanisms, they also contribute to unhealthy behaviors and social isolation. Furthermore, limited peer relationships, family conflicts, and experiences of bullying pose additional challenges to the participant's participation in daily activities. Concerns related to body weight and associated feelings of resentment adversely affect her self-esteem and social engagement. Conversely, her interests in English and music represent potential avenues for positive involvement. These findings underscore critical targets for intervention aimed at improving participation and overall well-being.

Intervention planning

Although no occupational therapy intervention was implemented as part of this case report, the findings highlight several priority areas that could guide future therapeutic planning. Based on the comprehensive evaluation conducted through the Kawa Model, an individualized intervention could aim to address key barriers such as social withdrawal, unhealthy coping strategies including excessive online gaming and food consumption, and family conflicts, while leveraging the client's strengths and interests, particularly in English and music.

Table 1. In-depth Analysis of the Participant’s Life Experiences Using the Kawa Model.

Kawa River Concept	Concept Definitions	Client-Centered Representations	Client’s Perspective
Water (Mizu)	The participant’s vitality or flow of life.	● Online Game	● She spends a large part of her day playing online games and turns to them when she wants to feel happy
		● Foods	● She consumes snacks while playing, especially processed foods during late-night gaming sessions. Eating also serves as a form of relaxation for her.
River Walls and Bottom - Riverbank (Kawa Zoko)	Physical and social environment surrounding the individual.	● Her Only Friend at School	● Her relationship with her peers is not good due to being bullied at school. She also has limited relationships with her only friend. She attributes great meaning to online friendships.
		● Her Only Friend in the Online World	● Although she loves her brother very much, they do not spend much time together.
		● Brother	● She has only one teacher she feels comfortable talking to about her school-related problems.
		● Teacher ● Books	● The client reads and enjoys reading books, although not every day.
Rocks (Iwa)	Obstacles or challenges in a person’s life.	● Weight	● Her weight, which she perceives as her biggest obstacle, negatively affects her life flow. Being overweight impacts her body image and makes her a target for peer bullying.
		● Bullying	
		● Family Relationship	● Bullying at school and in online environment increases her social isolation. She does not enjoy spending time with people.
		● Father’s Alcohol Abuse	
		● Feeling of Resentment	● Parental conflicts prevent her from participating in family routines. ● She avoids spending time with her father due to his alcohol use, which limits her emotional support. ● She harbors resentment towards past incidents, leading her to avoid forming new relationships.
Driftwood (Ryuboku)	Personal attributes, resources, and life circumstances such as skills, values, and experiences.	● English	● The client is successful at English.
		● Music	● Although she cannot play a musical instrument, she enjoys listening to and singing songs and would like to join the school choir.
		● Maturity	● Sometimes, in family relationships, the client feels compelled to take on the role of a parent in place of her own mother and father. In doing so, she perceives herself as mature or grown-up.

Potential intervention strategies may focus on restructuring the client's daily routines, roles, and habits, promoting engagement in meaningful occupations, and reducing occupational imbalance. These strategies are consistent with the identified core actions of occupational therapy in child and adolescent mental health, which emphasize focusing on routines, daily life activities, and the integral perspective of the subject (Táparo et al., 2024). Furthermore, the importance of diversifying approaches ranging from psychotherapeutic to psychosocial rehabilitation within the healthcare network is vital for addressing the heterogeneity of clinical demands in this population (Bueno et al., 2021). Enhancing social participation and supporting lifestyle redesign through meaningful and sustainable occupational engagement are key targets. For instance, incorporating music-based activities aligned with the client's interests could serve as an engaging entry point to increase participation and build self-efficacy. Additionally, collaborative family sessions might be considered to support healthier relational patterns that indirectly affect the client's occupational performance. These occupation-centered strategies align with the holistic and client-centered philosophy of the Kawa Model and aim to restore balance and flow in the client's life, ultimately supporting sustainable health-related behavioral changes and improved overall well-being.

Discussion

In this single-case study, the Kawa Model was employed to explore occupational challenges of an adolescent with obesity and to examine the potential role of occupational therapy in enhancing her occupational performance. This metaphor-based model provided a culturally sensitive lens to explore how personal, social and environmental factors interacted to shape her daily life. The adolescent's life flow was notably impeded by her engagement in excessive online gaming and emotional eating, which disrupted her sleep and academic routines. Concurrently, her tendency to consume snacks during gaming sessions contributed to unhealthy eating habits. The riverbanks in her life were weakened by familial discord, particularly parental conflicts and her father's alcohol use, leading her to withdraw from family interactions. Socially, she experienced peer bullying related to her weight, fostering a negative attitude towards school and increasing her sense of isolation. Despite these challenges, one of her teachers emerged as a supportive figure, providing a space where she could express her difficulties. Her weight was identified as a significant 'rock' in her river, presenting both physical and psychosocial barriers. Nevertheless, her proficiency in English language skills and passion for music were recognized as personal strengths (driftwood) that could facilitate positive change. Her interest in music, in particular, was seen as a potential avenue to enhance her life flow.

The water

The participant identified online gaming as "Water" (Mizu) however, this coping mechanism presents a clinical paradox. While gaming sustains her life flow emotionally, the sedentary nature of this occupation significantly contributes to her "Weight" obstacle (Rock). This observation aligns with literature indicating that excessive gaming (exceeding three hours daily) is strongly correlated with reduced physical activity and unhealthy snacking habits (Gülü et al., 2023; Puolitaival et al., 2020). In this case, the participant appears particularly vulnerable to problematic internet use due to impulsive tendencies, addictive patterns, and a propensity for risk-taking, aligning with findings

reported by (Toklu Baloglu & Caferoglu Akin, 2024). The participant's excessive internet use is not only associated with a sedentary lifestyle but also contributes to significant sleep disturbances. Studies specifically targeting adolescent populations have consistently demonstrated that gaming addiction disrupts sleep architecture and duration, affects the autonomic nervous system, and is linked to heightened physiological arousal at night as well as excessive daytime sleepiness (Hamre et al., 2022; Peracchia & Curcio, 2018). While the participant identified online gaming and snacking as her primary sources of life flow "Water" and relaxation, the interview revealed that these occupations inadvertently function as the root causes of her "Rocks".

The clients' late-night gaming sessions disrupt her circadian rhythms, leading to pronounced daytime fatigue and diminished engagement in school activities. Although literature confirms that adolescent sleep disruption is closely linked to altered melatonin levels, reduced physical activity, and increased obesity risk (Morrissey et al., 2020; Hayes et al., 2018), the participant notably did not include sleep disturbance as a Rock in her river. This omission is clinically significant, as it suggests she perceives her weight gain ("Rock") and eating habits ("Water") as isolated phenomena, failing to recognize the regulatory role of sleep. Furthermore, as noted by Kracht et al. (2022), poor sleep efficiency heightens cravings for unhealthy foods which she uses as another form of relaxation. This highlights a critical intervention point: the therapist must help the client visualize invisible barriers. Addressing the "Rock" of weight will be ineffective unless the client understands how her "Water" (gaming) disrupts her occupational balance. Therefore, sleep education must be prioritized not just as a health behavior but as a foundational occupation essential for maintaining her life flow.

The rocks and river walls

The analysis of the participant's river reveals a critical interaction between her stressors "Rocks" and her eating behaviors. While high consumption of ultra-processed foods is a known contributor to obesity (Costa et al., 2018; Pereira et al., 2023), the Kawa drawing elucidates the function of this behavior: the participant utilizes food as a primary coping mechanism "Water" to navigate around profound emotional "Rocks", specifically peer bullying, parental conflict, and her father's alcohol abuse. This pattern aligns with findings by Bui et al. (2021) and Evgin & Kılıç (2023), which document that emotional eating serves as a protective strategy against negative emotions in adolescents. However, this creates a paradoxical vicious cycle in the participant's life flow. Her coping strategy (eating) directly feeds her largest Rock "Weight", which in turn exacerbates her body image issues and makes her a further target for bullying another "Rock" identified in the table.

Bullying emerged as a pervasive "Rock" in the participant's river, creating a direct causal link to her emotional eating. The participant's aversion to school, driven by derogatory nicknames and online threats, illustrates how weight-focused stigma acts as a barrier to social participation. Literature indicates that such stigma does more than inflict psychological pain; it triggers a physiological stress response, including elevated cortisol levels (Himmelstein et al., 2015), which biologically fuels stress-related eating behaviors. This confirms the "counterintuitive" cycle described by Major et al. (2017), where the stigma attached to the "Weight Rock" actually provokes behaviors that further increase the weight.

Crucially, the Kawa analysis reveals that this peer rejection has eroded the participant's "River Walls" (social environment) in the physical world. With only one close friend and a hostile school environment, her river has been forced to flow toward the digital realm. This shift aligns with the pathway identified by Sun et al. (2023), wherein social anxiety in adolescents precipitates withdrawal and loneliness, prompting a compensatory turn to smartphone use that subsequently reinforces the addiction. However, for this participant, this compensatory mechanism manifests as a risky behavior: trusting older individuals online. Reneses et al. (2024) highlight that socially isolated adolescents are significantly more vulnerable to online victimization and risky interactions with strangers as they seek the emotional validation denied to them by their peers. Therefore, the online world, intended as a refuge, paradoxically introduces new potential "Rocks" into her river.

The participant's river is significantly constricted by familial "Rocks", specifically identified as 'Father's Alcohol Abuse' and 'Parental Conflicts'. While literature establishes that parental modeling and stress are key determinants of adolescent dietary behaviors (Dimitratos et al., 2022; Quattlebaum et al., 2021), the Kawa analysis reveals a more specific mechanical breakdown in this case: family disagreements disrupt the structure of daily life, specifically preventing shared family meals. As noted by Shriver et al. (2020), such unstable family environments directly facilitate the consumption of unhealthy snacks as a solitary activity. A crucial vulnerability in the participant's context is a specific lack of paternal support. The participant's avoidance of her father due to his alcohol use creates a deficit in emotional scaffolding. This aligns with Guevara-Valtier et al. (2021), who found that low emotional support, particularly from fathers, increases obesity risk among adolescent girls. The participant attempts to fill this emotional void ("River Wall") with food and online gaming ("Water"), which paradoxically reinforces her weight problem ("Rock").

Conclusion

This case report examines adolescent obesity through the lens of the Kawa Model, highlighting how physical, psychological, and environmental barriers interact to influence the individual's life course. The individual's "river of life" is constricted by rocks such as weight-related issues, family conflicts, and peer bullying. These obstacles disrupt the natural flow of life, limiting participation in daily activities and impeding the free movement of water. Analysis within the framework of the Kawa Model underscores the importance of enhancing supportive elements to improve the individual's life trajectory. Key interventions should focus on strengthening the "river walls" representing social support systems; increasing the number of "driftwood" reflecting positive coping strategies; and planning the rearrangement of "rocks" within the individual's environment to facilitate smoother flow. Additionally, the individual's interests in music and language learning should be regarded as natural resources that can promote the flow of water. In conclusion, the holistic perspective offered by the Kawa Model conceptualizes obstacles not merely as pathological factors but as variables that can be balanced through personal strengths. This approach supports the development of client-centered and culturally sensitive occupational therapy interventions, empowering individuals to direct their life flow more healthily and sustainably. In managing obesity, interventions should be personalized, considering not only physical health but also the psychosocial dynamics influencing the individual.

It is important to note that, as this study is based on a single case, its findings have limitations regarding generalizability and transferability. Variations in health perceptions, daily experiences, stigma, and access to opportunities among adolescents living with obesity can differ across cultural, social, and temporal contexts. Therefore, caution should be exercised when applying these insights beyond the specific cultural setting, such as the Turkish context presented in this case.

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Author's Contributions

Ayşe Yalçın contributed to the study design, data collection, literature review, and manuscript writing. Hatice Abaoğlu supervised the study as the academic advisor and contributed to the manuscript revision and critical review of the content. All authors approved the final version of the text.

Data Availability

The data that support the findings of this study are available from the corresponding author upon reasonable request.

Corresponding author

Ayşe Yalçın.

e-mail: ayse-yalcin@hacettepe.edu.tr

Editora de Seção

Profª. Dra. Ana Paula Serrata Malfitano