

Attitudes of Multi-Problem Young Adults on Physical Exercise: A Thematic Analysis

R.A.J. Chierandjoe (456944rc)

Erasmus School of Social and Behavioural Sciences, Erasmus University Rotterdam

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dr. Reshmi Marhe

dr. J.D.M. Van Dongen

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In The Name of The Most Wise, The Best of Planners

He Who delays, He Who provides

All praise belongs to Him

ABSTRACT

The current study aimed to explore the attitudes of multi-problem young adults (19-27 years, $N = 15$, $M = 23$, $SD = 2.5$) in Rotterdam on physical exercise through thematic analysis. Multi-problem young adults are a subgroup of emerging adults who experience severe psychosocial problems across multiple life domains, including risk behaviour, financial adversities, and occupational obstacles. Fifteen multi-problem young adults, two sports coaches and two social workers from the multi-modal day treatment program De Nieuwe Kans were recruited and interviewed during the COVID-19 pandemic to examine the perceived effects of physical exercise on their lives. Five themes were extracted from the qualitative data with Atlas.ti 25. Young adults experienced positive outcomes in physical well-being (1), psychological well-being (2), personal development (3) and social well-being (4). In particular, improvements in self-regulation, coping mechanisms, structure in lifestyle, and social contact were mentioned most frequently. For these benefits to occur, motivation, mindset and the supportive role of a sports coach were essential (5). A minority described adverse experiences in specific contexts, such as both trauma responses and aggression in combat sports or conflicts during team-based exercise. Overall, physical exercise can be used as a valuable tool for the development of multi-problem young adults in emerging adulthood. This study contributes to the growing body of qualitative literature on the effects of physical exercise for vulnerable emerging adults and provides a deeper understanding of its supportive role during a critical developmental period.

Attitudes of Multi-Problem Young Adults on Physical Exercise: A Thematic Analysis

Emerging adulthood is defined as the distinct transitional period from the late teens through the late twenties in industrial societies, including the Netherlands (Hill et al., 2015). It is characterized by maturation, identity exploration, character development, increasing self-sufficiency and autonomy, and the pursuit of meaningful relationships, education, and occupation, alongside preparation for parenthood and financial stability (Arnett, 1998, 2000, 2007, 2015; Arnett et al., 2014). Successfully navigating through the developmental processes associated with emerging adulthood may serve as a protective factor against instability later in life (Arnett, 2000; Pearlin, 2010). Although emerging adulthood provides opportunities for growth, it is also marked by vulnerability with a peak in risk behaviour, including unprotected sex, substance use and dangerous driving behaviours (Arnett, 2000). Emerging adults are often ambivalent towards their future role as adults and express feeling unstable during this developmental phase (Arnett, 2007, 2015; Di Napoli et al., 2022). Individual experiences of emerging adulthood vary depending on the availability of personal and social resources (Wood et al., 2018).

For a subgroup of vulnerable emerging adults with fewer resources, this developmental phase is particularly demanding: multi-problem young adults. The concept of “multi-problem” was first introduced by Donovan & Jessor (1985) and is since been frequently used in contemporary research (Dembo et al., 2016; McPherson et al., 2014). Multi-problem young adults are typically characterized by difficulties across multiple life domains (e.g., psychological well-being, education, work, socio-economic status, and social functioning). Compared to other emerging adults, multi-problem young adults show higher levels of risk behaviour, including delinquency, substance use and sexual risk-taking. These young adults often experience a lack of day-time activities, underemployment, and psychosocial dysfunction (Osgood et al., 2010; Van Duin et al., 2017; Zijlmans et al., 2021).

In addition, they may have experienced adverse childhood events and/or involvement with juvenile care services (Baglivio et al., 2015; Luijks et al., 2017; Van Duin et al., 2017, 2020; Zijlmans et al., 2020), further hindering a healthy transition to adulthood (Forte et al., 2011; Lösel & Farrington, 2012; Van Duin et al., 2020). A growing body of literature indicates that adverse childhood events (Bhutta et al., 2023; Webster, 2022; Wood et al., 2018; Yoon et al., 2022; Yu et al., 2024), educational disengagement (Baggio et al., 2015; Henderson & Hawke, Henry et al., 2012; Wallinius et al., 2016) and financial instability (Bask et al., 2020; Berzin et al., 2010; Font & Maguire-Jack, 2016; Lanz & Serido, 2020; Naudé & Esau, 2024) are associated with a higher likelihood of mental health problems and risk behaviours later in life and. Taken together, these findings highlight the importance of understanding and identifying factors and interventions that support a healthy transition for this population.

A potential tool to promote a healthier transition to adulthood for multi-problem young adults is structured physical exercise. Physical exercise is defined as bodily movement produced by skeletal muscles resulting in energy expenditure on a planned, structured, and repetitive basis with the aim of improving or maintain physical fitness (Caspersen, Powell & Christenson, 1985). Besides its physical benefits (Coalter, 2007), physical exercise has been linked with broader positive outcomes for typical emerging adults, including improved quality of life (Henchoz et al., 2014), enhanced psychological well-being (Clément et al., 2024; Granero-Jiménez et al., 2022; Herbert, 2022), character development (Giulianotti, 2004), increased self-esteem (Cekin, 2015), stronger social engagement (Coalter, 2007), academic engagement (Spruit et al., 2017), and future occupational success (Kay & Bradbury, 2009). Meta-analytical findings further indicate that physical exercise is associated with positive outcomes on social, emotional, behavioural, and academic domains in typical youth (Berger et al., 2023; Spruit et al., 2016). However, these outcomes may depend on the type and context of physical exercise. For instance, one study among Chinese adolescents found that certain

types of physical exercise (e.g. tag games, swimming, ice skating and skiing) increased antisocial behaviour in youth, whereas other types were linked to improved social skills or reduced antisocial behaviour (Yang et al., 2024).

For multi-problem young adults, physical exercise may be especially relevant (Spaaij, 2009), as it can provide structure, a sense of purpose and meaningful day-time activities (Coakley, 2011). It may also alleviate boredom (Chamberlain, 2013) and promote personal development, including self-esteem and educational engagement (Faulkner and Taylor, 2005; Kay & Bradbury, 2009). Moreover, physical exercise may offer an environment in which self-control and discipline can be developed (Coakley, 2011), while stimulating social and moral development (Seefeldt & Ewing, 1997). In addition, physical exercise is suited to provide a socially acceptable outlet for violent and aggressive behaviour (Mutz & Baur, 2009), which may mitigate the surge in criminal and violent behaviour multi-problem young adults experience during the transition to adulthood (Loeber et al., 2013; Kay & Bradbury, 2009). A meta-analytical review (Van der Sluys et al., 2022) demonstrated the positive workings of physical exercise on multi-problem young adults on their antisocial behaviour, moderated by the type of physical exercise and the type of antisocial behaviour. Evidence from recent systematic reviews further suggests that physical exercise may promote well-being and healthy functioning in populations comparable to multi-problem young adults. For instance, physical exercise in vulnerable youth has been associated with reductions in risk behaviour and increases in prosocial behaviour (Piggot et al., 2025), as well as life skills development (Hermens et al., 2017).

While these findings suggest potential benefits of physical exercise for multi-problem young adults, longitudinal studies show a decline in engagement in physical activity from adolescence towards emerging adulthood (Aira et al., 2021; Nelson et al., 2008). Societal changes, such as technological advancements, automation, and mechanization, may further

compromise engagement in physical exercise for emerging adults in general (D'Anna et al., 2024; Suhagiya et al., 2024). This decline may be particularly salient among multi-problem young adults, who face multiple barriers to engagement in physical exercise. In addition, quantitative research methods offer limited insight into the mechanisms and conditions behind the potential benefits, such as what meaning they attach to physical exercise. As Silk et al. (2014) argue, the overemphasis on evidence-based empirical methods can prevent the use of research methods and designs that give possibilities for youth to express themselves fully. Therefore, understanding the perspectives of multi-problem young adults on physical exercise is essential, especially since data on their attitudes deepen the understanding of their motivation and engagement in populations characterized by similar psychosocial instability and adversities.

Qualitative research allows for in-depth analysis and a deeper understanding of subjective experiences and psychosocial processes in multi-problem young adults, given its exploratory and descriptive nature (Draper et al., 2013). However, existing qualitative studies are generally conducted in groups of young adults that resemble multi-problem young adults yet are not fully identical. For example, vulnerable youth reported several improvements from physical exercise, such as providing a refuge from their circumstances, safety, appreciation, feedback, and support, while facilitating goal achievement and a sense of purpose. Over time, physical exercise became integrated into their identity (Super et al., 2019). Similar results were found in a qualitative study on socially vulnerable youth in the Netherlands (Haudenhuyse et al., 2013). For young sexual offenders, physical exercise provided psychosocial benefits and less recidivism (Draper et al., 2013). Among incarcerated youth, physical exercise meant psychosocial improvements, such as boredom relief and improvement in self-concept (Parker et al., 2014). While on one hand qualitative research suggests promising outcomes for these vulnerable groups, it also portrays potential challenges of

physical exercise on the other, such as physical exercise being described as “hard work” by adolescents (Burton et al., 2020). Notably, such studies mostly focus on (pre-)adolescents and youth deviating from health standards in weight and self-care (Burton et al., 2020; Özer et al., 2024; Kellmann et al., 2014), thus limiting generalizability for multi-problem young adults.

In sum, there is a necessity to study the subgroup of multi-problem young adults since their development is characterized by distinct, complex challenges that differ from typical emerging adults. These challenges make multi-problem young adults less likely to engage in physical exercise despite the various potential benefits of physical exercise the literature demonstrates. Although quantitative research on multi-problem young adults is growing, qualitative studies that provide insight into the underlying mechanisms, context and conditions behind physical exercise remain scarce. To complement existing literature, the present study uses semi-structured interviews and thematic analysis to explore the attitudes of multi-problem young adults on physical exercise. This study aims to provide insight in the benefits and challenges of physical exercise for multi-problem young adults, as well as the conditions required to support a healthier transition for this population. The results may add to the development of interventions for multi-problem young adults.

Methods

Study setting

De Nieuwe Kans

DNK is a structured, group-oriented multimodal day treatment program that supports male multi-problem young adults in their transition to adulthood and resocialisation process (Luijckx et al., 2017). Their primary goal is to refer the young adults to work, education or specialised mental health care. Secondary goals include increasing quality of life, fostering societal reintegration and boosting the self-sufficiency of multi-problem young adults over an

average period of 6 months. DNK stimulates structure, restructures maladaptive cognitive patterns, improves employment opportunities, and provides both educational and mental health care services. In addition, DNK aims to reduce criminal behaviour and recidivism (Luijks et al., 2017). They provide a setting in which prosocial interactions are encouraged, and societal norms and values are reinforced, e.g. communal dining among staff and participants or the absence of security at DNK (Luijks et al., 2017). Their treatment program includes educational and vocational services, mental health interventions, social work, coaching and sports lessons. Their multidisciplinary team consists of psychologists, behavioural trainers, social workers, (sports) coaches and teachers. Multi-problem young adults are referred to DNK by social welfare agencies, health care providers and probation service (Zijlmans et al., 2020; Van Duin et al., 2017).

Sport coaches and social workers

To enhance data richness and increase data validity (Carter et al., 2014; Donkoh & Mensah, 2023; Renz et al., 2018), interviews were conducted with sport coaches ($n = 2$) and social workers ($n = 2$) who (were) involved in the sports program at DNK. Their perspectives provided a supplementary understanding of the impact of physical exercise on the multi-problem young adults. Sport coaches actively delivered the sports program, whereas social workers had an observational role on participant's behaviour. Both were able to identify the underlying behavioural dynamics of the multi-problem young adults during their participation in the sports program.

Participants

Multi-problem young adults

Male participants aged between 19 and 27 years ($N = 15$, $M = 23$, $SD = 2.5$) were part of a cohort within an RCT study (Van der Sluys et al., 2024) on the efficacy of a sports-based

intervention at day treatment program *De Nieuwe Kans* (DNK; in English: New Opportunities) in Rotterdam. During interviews, participants were not enrolled at DNK. Fourteen out of fifteen participants were part of an ethnic minority. The multi-problem young adults enrolled at DNK experienced multiple problems, such as psychosocial, educational, and financial adversities (Luijks et al., 2017; 2020). For instance, most did not have fulltime daytime activities and a subaverage educational level, with most having no more than primary or secondary education. They had experienced adverse childhood events (e.g. parental mental health disorders, domestic violence). Seven out of fifteen participants were in psychological treatment. Three of them had previously been incarcerated and two were under current supervision of a probation officer (Van der Sluys et al., 2023).

Data Collection

Recruitment and ethics

Participants were recruited for online interviews through convenience sampling within the original RCT sample. Due to social distancing measures during COVID-19, recruitment took place via telephone, social media platforms (WhatsApp, Facebook, and Instagram), email and through acquaintances they had recently been in contact with. Participants were briefed on the study objective, procedures, and ethical guidelines (i.e. confidentiality of data and voluntary participation). A financial remuneration of €10 was given after participation. The Scientific and Ethical Review Board of the VU University in Amsterdam provided ethical approval for the current study (VCWE-2017-139).

Semi-structured interviews

In-depth interviews are proper tools to understand the perceptions of the interviewed beyond the quantitative data ('t Hart, Boeije & Hox, 2009). Therefore, online semi-structured interviews were carried out from March 2021 to May 2021 via video or telephone calls by

preference of the participants. Video interviews were held with Microsoft Teams (Microsoft Corporation, 2021) and Zoom (Zoom Video Communications, 2021), while several interviews were conducted with audio only with telephone calls. Interviews were held in Dutch and took between 60 minutes and 90 minutes, with an average length of 63 minutes. In cases where time was restricted, the interviews were divided into multiple sessions. Before interviews took place, the interviewers (master student interns) were trained in interview techniques (e.g. using open-ended questions) and data processing techniques by a PhD researcher involved in the study.

Prior to the interview, participants were briefed once more on the study objective, interview content and their right to abstain from participation. Participants were informed that the interview would be audio-recorded using a voice recorder and that the thesis supervisor and a fellow student were present to guide the interview if necessary. To proceed, verbal consent was requested from the participants.

The semi-structured interviews were mainly conducted with open-ended questions and occasionally closed questions, guided by a topic list (see Appendix A). Participants were encouraged to answer every question and follow-up prompts were made to cover topics in-depth if they seemed relevant for understanding their perspective. If participants were not able to answer questions immediately, the questions were asked again at the end of the interview. In addition, after each topic category, participants were invited to elaborate on any topic of relevance on or to address omitted topics, ensuring that a range of perspectives was explored. This allowed participants to share their own perspective without interference from the interviewer, in line with the recommendations from previous studies (Zinn, 2005). At the end of each interview, participants were questioned on their emotional state, to ensure that no emotional distress was caused from the interview. Contact information was provided to allow participants to address subsequent questions they had post-interview.

Topic list and questionnaires. The topic list was custom designed with the aid of three studies on physical activity (Haudenhuyse et al., 2013; Super et al., 2017a, 2017b) and consisted of physical exercise and the sports program at DNK. In the first category participants' experiences, emotions, feelings, impressions, values, and meanings were explored in relation to physical exercise. A quote from Haudenhuyse et al. (2013) was translated to Dutch: "Some people say that through sports, youngsters who have it difficult at home or school, can "become better". That through sports youngsters can cope better with their problems. Do you believe that?". The second category focused on participants' perspectives regarding the sports program at DNK. The second part of the interview focused on participants' background characteristics, such as socio-demographical information, and their former experiences with institutions and psychological support. Participants also completed additional questionnaires as part of a broader assessment; these measures were not included in the present study.

For sport coaches and social workers, the topic list was adjusted to their perspective on the role of physical exercise for multi-problem young adults. The Dutch version of the topic lists can be found as a supplementary document in Appendix A.

Data Processing

Interview data was transcribed verbatim using *Express Scribe* (NCH Software, 2023). To ensure participant anonymity, pseudonyms were assigned while taking into account gender and ethnic origin. During transcription, pauses, interruptions of speech as well as verbal fillers (e.g. "eh", "ah", "mhm") were written out. Non-verbal communication, such as gestures or emotions, was described as precisely as possible, e.g. "interviewee covers face with hands", if deemed relevant for interpretation of the transcript.

Data Analysis

Building on the framework of Braun & Clarke (2006), thematic analysis was used to actively identify patterns and attitudes from participants. Analysis began with several close readings of the transcripts during which notes and markings were made in the document margin to highlight relevant points and gain a general sense of the data. Through an inductive approach (Green & Thorogood, 2004), segments of words or sentences were identified and assigned to preliminary codes. For instance, statements concerning the role of physical exercise on the ability to bring people together, were coded as ‘social contact’.

As qualitative research is inherently embedded in hermeneutics, the analysis followed an iterative and reflexive process in which going back and forth through the data is necessary, while remaining aware of the researcher’s position within the study. A horizontal coding strategy was used in which codes were generated across the whole dataset, rather than focusing on individual participants. At this stage, no higher order themes were created. The initial coding phase was conducted using Microsoft Word (Microsoft Corporation, 2025), after which subsequent coding and thematic refinement were performed using Atlas.ti 25 (ATLAS.ti Scientific Software Development GmbH, 2025).

Based on the generated codes, emerging themes were extracted and systematically reviewed to seek interrelations. Finally, themes were clustered based on conceptual connections to create superordinate themes. Theme saturation was reached once coding did not result in new higher-order codes or themes.

Given the time interval between data collection and analysis, data triangulation could not take place. Instead, comparative analytical reflection was performed in which identified themes were compared to themes from parallel studies with the same dataset to create a reference point. Analytic memos were used to remain conscious of interpretations, interrelations, and preliminary explanations. Coding took place in multiple rounds, which

supported data engagement and analytic depth. Methodologists argue that the researcher constructs the meaning of data (Morrow, 2005) and is necessary to grasp participants' attitudes (Fade, 2004). From this point of view, the interval could have added to the study quality, as methodological knowledge increased.

Results

Theme overview

Using thematic analysis, five main themes were identified relating to the attitudes of multi-problem young adults on physical exercise. An overview of themes is presented in Table 1. In general, most participants shared positive experiences. For instance, Rudy said that “sports help overall with everything.” He defined physical exercise as “a practice that helps you find a balance between your life, mentally and physically.” For young adult Lorenzo, physical exercise had a substantial impact on the way he dealt with life. He needed physical exercise to remain at his preferred mental and physical standard. Similarly, social worker Lena proposed that physical exercise may support young adults in taking better care of themselves in general.

Notably, positive experiences were shared more frequently by young adults who were (previously) engaged with physical exercise. Only a minority expressed negative experiences with physical exercise or stated that physical exercise had not supported them. This group still expressed their appreciation for physical exercise and aspired to learn something from it at some point. A nuanced example was provided by one of the young adults, Jeremy, who stressed that physical exercise was not a cure-for-all but served as a medium to solve problems. Finally, several young adults emphasized the need for a personal approach in physical exercise and were unable to answer all interview questions, as some answers depended on individual preferences.

Table 1*Themes and Subthemes Based on Interview Results*

Theme	Category or subthemes
PE improves the physical well-being	Strengthens the body Enhances body image
PE improves the psychological well-being	Better self-regulation Coping mechanisms Enhancing self-esteem Better impulse control and anger management
PE as a catalyst for personal development	Teaches norms, values, and life skills Promotes a structured lifestyle Supports functioning in work and education
The bidirectional relationship between PE and social well-being	Builds and maintains social bonds Team-based exercise versus solitary exercise
Prerequisites for engagement in PE	The role of motivation The role of mindset The crucial role of sports coaches

Note. PE = physical exercise

Theme 1: Physical exercise improves the physical well-being

The first theme relates to the perceived impact of physical exercise on the physical well-being by multi-problem young adults and is divided in two subthemes on the physical state and the physical appearance. This theme shows that physical exercise provides physical strengthening and affects the perception of multi-problem young adults on their body.

Physical exercise strengthens the physical state

Young adults felt fitter, stronger, more conditioned, and more energetic. For some, physical exercise stimulated maintenance of a healthy physique. They exercised to prevent health issues and injuries later in life, viewing physical exercise as essential for overall health. For instance, Micah corrected his hunching posture with physical exercise, while Rudy stated that he would likely have been overweight without physical exercise. Lorenzo even shared that his engagement in physical exercise began with building muscles for health purposes. Similarly, Jeremy noted:

Because I would also like to play soccer with my children, you know? Before you know it, I am an old man, and then I cannot do anything... Age will turn on you at some point and I prefer to prevent that.

Even young adults who did not regularly exercise shared that inactivity led to regression of their bodies. For example, one young adult attributed his deteriorating health to a combination of inactivity and smoking, whereas another acknowledged that he would be healthier if he exercised frequently.

A minority of cases reported negative physical consequences, particularly in the context of professional sports. More than half of the young adults (had) aspired to play sports professionally but noted that high-intensity training and overtraining often resulted in permanent or long-lasting injuries. Social worker Lena emphasized that multi-problem young

adults are especially susceptible to injuries due to maladaptive lifestyle. Conversely, Anouar viewed physical exercise as a rehabilitation tool for the recovery of injuries, while Ronel described a unique challenge which he solely experienced: his body had become so accustomed to physical exercise, that he experienced physical discomfort when physically inactive.

Physical exercise to enhance the physical appearance

Multi-problem young adults also stressed the influence of physical exercise on their perception of the physical appearance. When asked to think of reasons to exercise, sports coaches, social workers and young adults reported for weight loss or to build to improve their body image. Young adult Rudy suggested that his focus on physical appearance reflected a low self-esteem. From his perspective, young adults would function better if they would be content with their appearance.

Only a minority of young adults prioritized physical fitness over physical appearance. Among them was Najim, who stated that he would remain positive regardless even if he weighed 300 kilograms.

Theme 2: Physical exercise improves the psychological well-being

The second theme explores how physical exercise influences the psychological well-being of multi-problem young adults. There were perceived improvements in self-regulation, coping mechanisms, self-esteem, impulse control, and anger management.

Physical exercise for better self-regulation

Emotional regulation. Most young adults were able to regulate their emotions better through physical exercise. They described feeling “joy and happiness” (Tayo and Ronel), “warm and energetic” (Tayo) and “euphoric” (Jeremy). These effects were not only experienced during physical exercise but lasted afterwards. Physical exercise also served as an

emotional outlet, allowing them to feel calmer (i.e., “zen” by Anouar) and release tension. Rudy described: “a lot of weight got off my shoulders” and suggested a dependency to physical exercise as his mental health would deteriorate without it. A minority did not experience benefits on their emotional regulation, but still believed that physical exercise could help in the future.

Cognitive regulation. Some young adults gained a deeper understanding of cognitive and affective processes, such as a better processing of negative thoughts and feelings. During exercise, they would focus on technique, themselves, or daily planning. Others reported the opposite: it cleared their minds entirely, providing a sense of physical and mental rest. Najim shared an anecdote on his negative thoughts: “If you don’t think about it, then it is not there anymore, it is as simple as that.” Only one young adult, Lorenzo, reported increased rumination during physical exercise. Social worker Lena suggested that mindfulness and yoga could deepen awareness of thoughts, emotions, and the body, promoting a more conscious way of living with increased focus on the present instead of stressors.

Physical exercise as a coping mechanism

Stress relief. Physical exercise was widely used to cope with stress, allowing them to relax. To illustrate, Lorenzo shared: “It [physical exercise] provides me with peace, it takes away the pressure [of] what I did the whole day, it really takes away the pressure.” However, social worker Mara stressed that excessive reliance on physical exercise as a coping mechanism could lead to avoidance of problems, highlighting the need for responsible engagement.

Adverse life events and trauma. Beyond daily stressors, both social worker Lena and young adults highlighted the potential of physical exercise to cope with adverse life events and pedagogically at-risk environments (e.g. absent parents, residing at youth care

institutions). Social worker Lena observed that the young adults preferred physical exercise over psychological help, stressing its importance for this group. Christian, for example, used the gym as a refuge during a period of homelessness. It was the only place he could go to.

In addition, social worker Lena mentioned that certain stimuli, such as physical contact or sounds, during physical exercise could trigger a trauma response in young adults. For example, Lena recalled one young adult who got triggered by a whistle, leading to decreased attendance at the sports lessons of DNK.

Physical exercise to enhance self-esteem

Physical exercise enhanced self-esteem by making young adults feel capable and handle more than they expected. Jace illustrated the importance of self-esteem: “If you don’t believe in yourself, it won’t work, you really need to believe in yourself, you really need to believe that it will really work.” Sports coach Dmitri highlighted combat sports in particular as effective for building confidence and confronting fears. Lorenzo provided an example: his low self-esteem and fear for judgement of others prevented him from exercising in a gym. Through physical exercise, he overcame this fear and, in his words, “found himself again”. Physical exercise aided him in becoming the person he aspired to be. When he enters the gym now, he turns on music and focuses on himself.

Physical exercise for better impulse control and anger management

Improvements in self-regulation, coping mechanisms and self-esteem allowed young adults to tap into a deeper level of psychological functioning: impulse control. Young adults avoided conflicts and considered consequences after becoming calmer and more thoughtful through physical exercise. As Lorenzo emphasized, it is “better to prevent than to cure” when in conflict. For some young adults, physical exercise became a necessity to regulate their anger effectively. These young adults learned to use physical exercise as a socially accepted

outlet and expression of anger. To illustrate, Najim used to punch a boxing bag to channel his anger or went for a run to calm down. Rudy shared a similar experience:

Before allowing it [stress] to overwhelm myself, I would stop, observe the situation, take a step back, and be like yo, I can just go outside and walk in the [parc] for ten, fifteen minutes, and that will calm me down. Or I can just punch the walls ten, twenty times and, I should be good. Then I damage my arm.

Sports coach Dmitri stressed the role of combat sports in particular to stimulate impulse control and anger management. It reduces “the ego”, while teaching about physical capabilities, (self-)respect and the absurdity of harming others. These lessons reduced their tendency to engage in conflict, by enabling them to maintain a calmer and confident attitude. Hakim reflected on his experience with combat sports: “there is always someone better than you”.

In contrast, both social worker Lena and some young adults mentioned that combat sports, specifically (kick)boxing, increased aggressive behaviour. For example, Jace would become angry when hit in the face during sparring, but calmer when hitting a boxing bag. These experiences emphasize the complex relation between diverse types of physical exercise and psychological outcomes. As Najim, pointed out: “There are many, many types of sports, you get me? And every sport really brings its own character, you get me? And that naturally influences your health.”

Theme 3: Physical exercise as a catalyst for personal development

For most young adults physical exercise stimulated personal development across several domains, such as self-improvement and the pursuit of personal goals, education, and work. To illustrate, Rudy pointed out that he found himself again through physical exercise, while Tayo first and foremost responded with “development” when asked to define physical

exercise. However, Jace emphasized that certain conditions, such as inherent personality traits, are required for development. This theme is further illustrated through subthemes on norms and values, life skills, lifestyle, work, and education.

Physical exercise teaches norms, values, and life skills

Both sports coach Dmitri and the young adults described that improvement in physical exercise mirrored personal growth. It taught them norms, values and life skills that could be applied in daily life. Sports coach Dmitri framed physical exercise as a long-term foundation for life, noting that: "... even though they will walk a wrong path, they know how to return to what is good for their bodies."

To elaborate, physical exercise taught the young adults about norms and values. Most learned about self-respect, but also to understand others and sympathize with them. For example, Rakesh learned that everyone is equal and should be valued, while Micah described becoming less "egoistic" and more considerate to others. In addition, the young adults learned to stand up for themselves and others.

Moreover, many young adults associated physical exercise with discipline and perseverance. They learned to push personal boundaries, despite it being a demanding process. Micah, for example, compared high-intensity physical exercise to torture, but knew that he become better post-training. He described his experience as "being in a tunnel and having to get to the end" and would ask himself: "Where is the edge? And how far can I go beyond?".

Not all young adults shared these experiences. Jace did not feel like physical exercise taught him meaningful life lessons, nor had it supported him in achieving his personal goals. He remarked that young adults should make independent decisions and take responsibility. Interestingly, Jace also described his overall experience with physical exercise as "...boring, shit, nothing more. Just tiresome."

Physical exercise promotes a structured lifestyle

Structure and routine. The young adults experienced various lifestyle changes through physical exercise, in particular by structuring their lives through exercise routines. For instance, Micah felt that the sports program at DNK brought “freshness” into his life and that of other young adults. An exercise routine helped him find balance. The importance of routine was further emphasized by social worker Lena, who mentioned that the lives of multi-problem young adults could change substantially if physical exercise became a part of their routine. For example, sports coach Dmitri observed that unhealthy lifestyles often co-occurred with substance abuse, while the young adults confirmed that structure in their lives raised awareness of their substance (ab)use. They were less likely to smoke tobacco and drink alcohol while exercising routinely.

Consistency was repeatedly mentioned as a key condition for beneficial outcomes. For instance, Jeremy described difficulties maintaining a routine and discipline due to inconsistency. Inconsistency reduced progress and subsequently decreased motivation to exercise. Following up, social worker Lena noted that inconsistent physical exercise prevented the young adults from fully exploiting its benefits.

Sleep and dietary habits. Increased sleep quality was another frequently mentioned lifestyle change. Once the young adults exercised consistently, they felt responsible for maintaining healthy sleep routines. For example, Jeremy remarked: “... you don’t go sleep 4 hours a night like a teenager.” Both social worker Lena and young adult Najim explained that physical exercise tired young adults, which supported them with their sleeping routine.

In addition, the young adults built healthier eating habits and more active lifestyles through physical exercise. For example, one young adult pointed out that physical exercise encouraged him to go outside more often, made him build an active lifestyle and observe a diet.

Productive day-time activity. Physical exercise was also described as a productive daytime activity that provided satisfaction and stability. For instance, Christian used physical exercise to pass time when he was incarcerated. Sports coach Dmitri followed up that a lack of daytime activity contributes to boredom and temptation, which young adults confirmed. Rudy shared being prone to “ruin himself” when bored, while Ronel mentioned that boredom got him outside more often, “doing bullshit” until late at night without a plan. Several other young adults and sports coach Dmitri stated that physical exercise steered them away from at-risk environments. For instance, Wesley spent less time on the streets because he visited his sports club more often. When asked how Tayo’s life would be without physical exercise, he responded: “Yeah, I would have been locked up or six feet under the ground or something like that man.”

Physical exercise supports functioning in work and education

Occupational settings. The norms, values and life skills learned from physical exercise transferred to occupational and educational settings. Sports coach Dmitri suggested that young adults who exercised performed better during job applications and education. Examples of these skills given by participants include punctuality, communication, collaboration, physical conditioning for demanding working conditions, learning to accept authority and receive feedback. A handful of young adults also described physical exercise as “opening pathways”. For instance, one young adult coached by sports coach Dmitri started his own business after participating in the program at DNK.

Some young adults aspired to work in the field of health and sports due to their positive experiences with physical exercise. For example, Tayo volunteered to help organize soccer tournaments in the neighbourhood to educate new generations based on his personal experience. Likewise, Jeremy stated that a strong physical appearance contributed to the likelihood of finding working in the sports industry. The young adults explained how

technical skills and knowledge learned through physical exercise (e.g. insight and efficient, safe lifting techniques) prepared them for their professional pursuit in the field of health and sports. Najim shared an anecdote about a friend who injured himself and began educating himself in training techniques to prevent future injuries. Now, his friend works as a personal trainer.

Educational settings. Regarding education, physical exercise increased educational attendance and engagement. Most of the young adults reported that the sports program was the most enjoyable component of the program at DNK. Some young adults primarily went to DNK for the sports lessons and would have dropped out without it. One young adult shared that he had learned the most during the sports lessons compared to the other lessons at DNK, while Tayo described feeling freer during the sports lessons compared to “the school chairs”. A minority experienced physical exercise differently: Ronel enjoyed physical exercise but preferred the art session at DNK to the sports lessons, while Arthur would have been able to spend more time working or studying without physical exercise.

Theme 4: The bidirectional relationship between physical exercise and social contact

Physical exercise strongly influenced the psychosocial development of multi-problem young adults. Overall, the findings indicate a reciprocal feedback loop: physical exercise encouraged the young adults to seek social contact, while social contact stimulated them to exercise. This main theme is divided in two subthemes: building and maintaining social bonds and team-based exercise versus solitary exercise.

Physical exercise to build and maintain social bonds

Social interconnectedness. Sports coach Dmitri described physical exercise as an environment suitable for group forming, group cohesion and interconnectedness. For instance, when asked what physical exercise meant for Micah, he first responded with: “It brings

people together, that is one thing. It creates relationships, it is fun to do.” Only one young adult responded differently: Christian did not need physical exercise to “be a brother to someone” or to offer a “listening ear” to others.

Some bonds formed through physical exercise were unexpectedly durable and lasted even after the program at DNK. For example, Anouar described the friends he met through physical exercise as “a new family”. Sports coach Dmitri suggested that shared life paths among the young adults stimulated bonding and increased mutual trust. Trust proved to be essential in social contact. Micah, for example, needed to build a relationship with the sports coaches before he was willing to exercise.

Social network. In addition to strengthening and forming relationships, physical exercise broadened social networks. Arthur believed that physical exercise connects people from different cultures. Similarly, Najim described how soccer matches with university students expanded his social network beyond his usual environment. This experience felt as if he had “entered another world” that he would have remained inaccessible without physical exercise.

Social isolation and integration. Physical exercise also reduced social isolation and stimulated reintegration. Lorenzo, for example, claimed he might have become “a hermit” during COVID-19 without physical exercise, while another young adult learned to be sociable again after incarceration. Sports coach Dmitri explained that physical exercise may lower barriers to social contact by demonstrating that social interactions can be enjoyable, thereby pushing young adults over the edge of social discomfort.

Social motivation. Both sports coaches, social workers and the young adults emphasized the importance of the social context for motivation and engagement in physical exercise. Rudy, for example, described difficulties to stay motivated for exercise when living alone. In multiple cases, acquaintances introduced young adults to new types of physical

exercise they otherwise would not have explored or valued. Social worker Mara nuanced this process by highlighting the role of parental upbringing, as illustrated by Micah, who got introduced to physical exercise through his mother.

The effect of team-based exercise versus solitary exercise

Team-based exercise. Most young adults favoured team-based exercise over solitary exercise, describing it as “sociable”, “cozy” or the best way to start exercising. For several young adults, exercising with friends or family was their primary reason to exercise. They reported more positive mood states (i.e. happiness and joy) when exercising with their social network. For instance, Micah, who described himself as socially reserved, preferred to exercise with his friends and felt more motivated and willing to engage in team sports due to the team-feeling and the group cohesion. Tayo explained similarly how young adults get to motivate and know each other when exercising together. The impact of team-based exercise is also illustrated by Ronel, who quit playing at his hockey club after his team disbanded.

Sports coaches further described how social contact increased engagement in physical exercise. Sports coach Dmitri observed that young adults pushed each other beyond their boundaries when exercising together in his sports lessons. Likewise, sports coach Wendell witnessed young adults exchanging compliments after exercising together, stating that: “Physical exercise is fun when you are exercising with others that also like to exercise, or who also want to be motivated to exercise”.

However, team-based exercise could also negatively influence motivation when teams were in conflict. In Ronel’s soccer team, conflicts frequently occurred when competitive matches did not meet expectations. These conflicts demotivated him and his teammates, leading to feelings of failure and escalated into bullying behaviour, such as excluding others. Ultimately, these effects contributed to many team members leaving the club. Ronel, however, mentioned that he thrived in this type of environment, as negative feedback motivated him.

Solitary exercise. While the majority of young adults favoured team-based physical exercise, a minority preferred solitary exercise. They described solitary exercise as a lingering habit that developed during the COVID-19 period. Another minority of young adults preferred neither solitary, nor team-based exercise. For them, others exercising in their surroundings was sufficient to increase motivation and boost morale. This phenomenon was also observed by sports coach Dmitri, who described young adults becoming motivated in his lessons after seeing peers exercise, while initially unwilling to participate and forgetting their workout clothes.

Theme 5: Prerequisites for engagement in physical exercise

Overall, engagement in physical depended mainly on motivation, mindset, and the role of sports coaches, reflecting the interaction between individual and contextual factors. These will be discussed separately in the last theme on prerequisites.

The role of motivation in physical exercise

When asked for reasons why young adults be motivated to engage in physical exercise, young adults gave similar answers. Tayo described it as “fun”, whereas other young adults highlighted that it brought positivity within their lives.

Primary barriers for motivation. When asked why young adults might be less motivated to exercise, young adults mentioned a wide range of barriers, including low self-esteem, laziness, or fear. The most common barrier, however, was a lack of mental space and a lack of time to fully commit to physical exercise. Several young adults reported that their minds were preoccupied with stress, such as financial problems. Hakim considered exercise without full focus ineffective, as it would lead to inconsistency, thus no progress, and consequently reduced motivation.

Ronel added that some young adults replaced the function of physical exercise with

other daytime activities. Rudy, for instance, explained that his physically demanding job made him exercise less. While the young adults mentioned that they lacked focus to engage in physical exercise, sports coach Dmitri suggested that physical exercise may function as a form of distraction that may have the exact effect: it can create mental space and improve focus.

Secondary barriers to motivation. In addition, some young adults mentioned laziness as a barrier for motivation, whereas others reported that physical exercise simultaneously helped them cope with laziness. For instance, Micah explained that his main obstacle for engagement, was taking the initiative to exercise: once he was mid-session, he enjoyed it.

Finally, fear of (further) injury and physical restrictions was mentioned by several young adults as reasons to quit physical exercise. Sports coach Dmitri observed the same pattern among many young adults he coached. He tried to work around their injuries to keep them involved with physical exercise.

The role of mindset in physical exercise

The young adults pointed out that their motivation to exercise depended on their mindset. Sports coach Dmitri stated: “You can use everything. But in the end, it is about the willpower, you understand? If someone really wants to change, then that person will make it happen.” Young adults shared similar statements, such as “either you go for it, or you don’t” (Christian) or “you are the one that needs to make the choice” (Jace).

At the same time, young adults described that physical exercise also changed their mindset, for example by enabling them to remain positive during difficult life events (e.g. being in debt, lacking motivation). Sports coach Dmitri described how physical exercise supported a shift towards a mindset of possibilities rather than problems: “Not saying, you know, I can not do it. No, you can not do it *yet* [emphasis added], you know, but there will be

one day that I can do it.” Similarly, social worker Lena stated that physical exercise allowed young adults to develop ownership over their lives by “feeling less of a victim”.

Several young adults provided examples of this shift in mindset. Najim actively searched for ways to work around his injuries instead of blaming physical exercise, stating that “in everything you do, there are risks involved.” Likewise, social worker Mara and young adult, Wesley, observed less resistance and more flexibility in accepting advice of others. Sports coach Dmitri also observed young adults stepping further out of their comfort zone through physical exercise.

However, not all participants reported changes in mindset. Najim stated that he would maintain the same positive mindset regardless of physical exercise and emphasized the importance of responsibility: “There are also people who are still unhappy while they are exercising, so... Exercise isn't a miracle cure that makes you happy in a whim. You have to take control of your own happiness, you know?”

The crucial role of sports coaches in physical exercise

The influence of sports coaches. Physical exercise was especially effective when sports coaches were involved. Young adults reported that sports coaches provided stimulation, support, and motivation. Only one young adult described a less positive experience, stating that he was not “best friends” with some caregivers at DNK.

For some young adults, the presence of the sports coaches at DNK was their only incentive to attend the program. For instance, Anouar described physical exercise as enjoyable because the sports coaches elevated his mood. He stated that the only positive experience he had at DNK was with the sports coaches. Arthur even described the sports coaches as “family”. Similarly, Micah said:

So, Dmitri [sports coach] and Wendell [sports coach], I liked them very much and they kind of motivated you as well. It's mostly the people, they are happy people, so they encourage you. It feels good, it just feels good to train under their guidance.

When asked to elaborate on the role of sports coaches, the young adults valued the coaches' expertise and instructions, which boosted the young adults' motivation to exercise, built their confidence and helped prevent injuries. For example, Lorenzo enjoyed exercising with the sports coaches, because they understood what he needed, which made him feel calmer. He also appreciated the time all the staff at DNK took to support him. Likewise, sports coach Wendell described that one of his students valued that he "was able to make mistakes" during his lessons.

Furthermore, the young adults reported feeling heard and trusted by sports coaches. The sports coaches held a unique position in their social network. Sports coach Dmitri described experiencing a reciprocal bond with the young adults, which he partly attributed to having walked a similar life path as them. This allowed him to understand the personal situations of the young adults better. Young adult Anouar affirmed this perspective and stated that caregivers at DNK took previous adverse experiences into consideration.

Mechanisms behind the beneficial working of sports coaches. Sports coaches also attributed the effective role of sports coaches to the need for ongoing professional development. For instance, sports coach Dmitri highlighted that sports professionals need to "keep themselves sharp" and to fully utilize the potential of physical exercise. Likewise, Wendell described his method of coaching as a constant process of evaluating based on feedback from the young adults and adjusting accordingly. Both sports coaches attempted to tailor sports sessions to individual needs, considering the variety in prerequisites and barriers influencing engagement in physical exercise (e.g. self-esteem, mental space, mindset). For instance, young adult Najim illustrated how different types of physical exercise served

different purposes. He used to run to “turn off his brain” and play soccer to energize. In addition, the sports coaches actively focused on psychosocial domains beyond the physical domains that were influenced by physical exercise, such as the earlier mentioned (sub)themes on mindset, motivation, coping mechanisms, dealing with fear, creating structure to build consistency and goal setting.

Furthermore, sports coaches and social workers explained that competitiveness in physical exercise could reduce mental barriers, allowing young adults to behave more naturally and display covert personality traits. They noted that such personality traits often manifested as externalizing behaviour (e.g. swearing and getting into conflicts with peers or sports coaches). Sports coach Wendell illustrated their behaviour, stating that he “did not know that some guys had such demons inside”. Social workers at DNK used these observations to delve deeper into the underlying causes of the young adults and consequently provide them with better guidance.

In turn, the young adults appreciated the coaches’ effort to develop tailored approaches and the integration of the physical and mental aspects of physical exercise. For instance, Wesley valued the opportunity to vent about personal circumstances with the sports coaches, which strengthened his sense of belonging to a group and stimulated group cohesion. The young adults particularly appreciated being involved by the sports coaches in the organization of the sports lessons. Sports coach Dmitri provided an example in which he allowed young adults to choose the type of physical exercise for the sports lesson, which the young adults experienced as empowering. The young adults linked such initiatives to leadership and autonomy. Not only the sports coaches, but also the other staff at DNK reported to actively encourage young adults in developing leadership skills.

Discussion

Theme summary

The present study is one of the few with the aim to gain a deeper understanding on the attitudes that multi-problem young adults hold regarding physical exercise through thematic analysis. In general, participants experienced physical exercise positively on various domains. It improves the physical well-being (1) and psychological well-being (2) while stimulating personal (3) and social well-being (4). For these processes to take place, certain conditions are required, such as the motivation of participants and the presence of sports coaches (5). Only a minority described adverse effects, in relation to trauma and aggression in combat sports, but also on the role of conflicts in team-based exercise.

The importance of physical exercise for the physical well-being (theme 1) was stressed numerous times by sports coaches, social workers and young adults. It strengthens the body and provides opportunities to learn about physical capabilities. Furthermore, it improves physical vitality. Findings from studies on physical improvements through physical exercise in young adults (El Assar et al., 2022; Kemel et al., 2021; Perry et al., 2023; Petronhilo et al., 2023; Plaza-Díaz et al., 2022) and on the maintenance of physical vitality through physical exercise (Kukić et al., 2023; Jones et al., 2024; Yan et al., 2023) were in line with the current study. Somatic health concerns are more prevalent for emerging adults who perceive their transition to adulthood as unsuccessful (Barlett et al., 2018; Kuang et al., 2023). This increases the potential of physical exercise in its supportive role for the subgroup of multi-problem young adults.

Consequently, improvements of the physical body boosted at least one aspect the psychological well-being (theme 2): body image. The change in self-perception combined with a renewed understanding of their own physical capabilities increased their self-esteem. Consistent with prior work on the relation between body image, self-esteem and physical

exercise in emerging adults (Faro et al., 2021; Jiménez-Morcillo et al., 2024; Liu et al., 2024; Teti et al., 2020), the current findings become especially relevant for multi-problem young adults who experience difficulties with their self-esteem (Gull & Ahmad, 2025; Wang et al., 2017). For instance, through the relation between self-esteem is and life satisfaction, suggesting a supportive role for overall well-being (Szcześniak et al., 2021).

In addition, physical exercise stimulated other psychological processes, including a more effective self-regulation (emotional and cognitive) and adaptive coping mechanisms (i.e. stress relief and trauma processing. These experiences align with studies reporting associations between physical exercise and an improved psychological well-being (Firth et al., 2020; Granero-Jiménez et al., 2022; Groves et al., 2024; Kemel et al., 2021; Martín-Rodríguez et al., 2024). For instance, physical exercise has been described as a coping strategy with the ability to improve the mental health of emerging adults (Clément et al., 2024), while self-regulation has been identified as a protective factor against antisocial behaviour (Logan-Greene et al., 2022). Moreover, Li et al. (2016) found associations between better self-regulation and higher levels of physical activity, suggesting a reinforcing feedback loop between psychological well-being and physical exercise. Such findings are particularly relevant for multi-problem young adults in emerging adulthood, a developmental phase with a high prevalence of mental disorders (El Ansari et al., 2024; Collins et al., 2023, 2025; et al., 2018; Kuang et al., 2023; Kwan et al., 2020; Solmi et al., 2022).

A possible explanation for these experiences might lie in the potential of physical exercise to relieve stress in a socially accepted way (Mutz & Baur, 2009), therefore allowing multi-problem young adults to vent without causing harm to others. A different explanation might be the nature of physical exercise to provide exposure to manageable stressors during workouts, with the potential to train their self-regulation. The current findings highlight the potential for multi-problem young adults to develop strategies through physical exercise that

enable them to deal with adversities regarding their psychological well-being (Firth et al., 2020).

However, a minority of young adults claimed that combat sports in particular (i.e. boxing and kickboxing) exacerbated their aggression. Studies likewise observed specifically full-contact amateur combat sports to enhance aggression (Finkeldey, 2019; Kreager, 2007; Mazzanti et al., 2025; Yang et al., 2023). On the other hand, researchers found diminished associations with child conduct disorder and adult antisocial behaviour when engaged in physical exercise (Samek et al., 2015), greater self-efficacy and reduced depressive symptoms (Bodin & Martinsen, 2004). These contrasting findings suggests that the effect of physical exercise may depend on the type of physical exercise.

Another notable observation was the avoidance and drop-out of young adults when exposed to stimuli resembling trauma, such as physical contact or a whistle. This finding highlights the need for safety in a sports environment for physical exercise to realize its potential, especially for individuals such as multi-problem young adults, who have experienced adverse childhood events. Certain types of specialized sports interventions were found to be especially beneficial for emerging adults that got triggered during physical exercise (e.g. Trauma-Informed Physical Activity in Berger et al., 2023).

Nevertheless, the combination of several domains of psychological well-being: strengthened self-esteem, improved self-regulation and coping mechanisms, allowed the multi-problem young adults to reduce externalizing behaviour by controlling their impulses, leading to better conflict and anger management. The current findings showcase the potential of physical exercise to play into these deficits for multi-problem young adults, who are known for showing more impulsivity and proneness to aggression (Bakken et al., 2023; Benedetti et al., 2022; Dixon et al., 2024; Jia Yun et al., 2023; Malvaso et al., 2022; Maurya & Maurya, 2023; Micciolo et al., 2022; Stamates et al., 2023). For instance, lower sports participation

was associated with higher impulsivity for individuals who experienced adverse childhood events (Janković et al., 2024) and higher sports participation with increased inhibition (Van der Sluys et al., 2024). The relationships between self-understanding, self-esteem, self-control, and aggression have been studied in previous research with similar findings (Cherrier et al., 2023; Lu & Shi, 2026; Morsünbül, 2016), highlighting the complex interrelatedness between themes.

Furthermore, physical exercise supported the personal development and daily functioning (theme 3) of multi-problem young adults across various life domains by the integration of norms and values (i.e. respect, discipline and perseverance) and the development of life skills (e.g. punctuality, communication skills). Prior research suggests that prosocial and moral values, resilience, self-competence, and social skills serve as protective factors against antisocial behaviour (Gubbels et al., 2024; Hamatschek et al., 2024; Mackenzie & Farrington, 2015; Niaz & Zafar, 2023; Ring et al., 2023) which is especially relevant given the co-occurrence of antisocial behaviour among multi-problem young adults. Moreover, the development of life skills is considered to be crucial for the transition to adulthood (Tanious et al., 2023) and has been found to transfer from the context of physical exercise to broader life domains (Ter Harmsel-Nieuwenhuis et al., 2022).

These experiences may be explained using physical exercise as a tool to learn rules and consequences (Coakley, 2011), thereby facilitating the development of respect and discipline, while a delayed onset of progress and gratification in physical exercise may stimulate perseverance. Similarly, the development of communication skills may be accredited to team-based exercise and the need for interdependence and collaboration. The current findings suggest that physical exercise was not only effective as physical training, but also for psychological strengthening.

In addition, the multi-problem young adults developed healthier lifestyles through

physical exercise in terms of structure and routine, including improved sleep and dietary habits and reduced substance abuse. This finding contrasts with previous research that observed a decline in healthy lifestyle behaviours during the transition to adulthood in the absence of physical exercise (Brown et al., 2022; Frech, 2012) and a simultaneous increase in risk behaviour (i.e. criminality and substance use) during emerging adulthood (Bourke et al., 2025a; Champion et al., 2018; Collins et al., 2023; Wood et al., 2018).

Participants attributed the surge in risk behaviour to boredom because of a lack of meaningful daytime activities. Consistent with their experiences, researchers identified boredom (Lee et al., 2025; Matijašević et al., 2025; Seymen & Uzun, 2026) and a lack of structured day-time activity (Trinidad et al., 2020) as a key factor in the development of risk behaviour in youth. For the majority of multi-problem young adults, this gap was partly filled by the structure and routine provided by consistent physical exercise. This indicates that exercise routines served as a protective factor against risk behaviour.

Moreover, physical exercise brought young adults into alternative environments that reduced the exposure to risk behaviour. Both participant's experiences and prior studies emphasise the important role of environment in the persistence of risk behaviour (Davignon et al., 2022; Lee et al., 2020; Logan-Greene et al., 2023; Ragan et al., 2023), mental health (Lee et al., 2023), and engagement in physical exercise for young adults (Frech, 2012; Langdon et al., 2017; Li et al., 2016).

Exposure to alternative environments created opportunities for social involvement with others. Social contact appeared to interact bidirectionally with physical exercise (theme 4), aligning with previous research (Li et al., 2016). In general, multi-problem young adults were able to form durable bonds and connect with others through team-based physical exercise. Similar positive social health outcomes of physical exercise were found in the literature (Du & Li, 2022; Kemel et al., 2021; Kirby et al., 2022). For instance, social skills

have been identified as a protective factor against antisocial behaviour (Cherrier et al., 2023; Logan-Greene et al., 2022). At the same time, emerging adults generally experience difficulties in communication and the engagement in relationships (James-Kangal et al., 2019), highlighting the heterogeneity and complexity of emerging adults.

Furthermore, multi-problem young adults reported a heightened sense of belonging to a group through physical exercise, which may serve as a protective factor against maladaptive types of group forming (e.g. gang membership). From this perspective, physical exercise can create an environment in which maladaptive cognitive and behavioural patterns in social interactions are targeted.

In addition, social contact during exercise supported them with social isolation, a phenomenon that frequently occurs in young adults and has been associated with negative psychological functioning (Kim et al., 2025; Hemberg et al., 2022; Prizeman et al., 2023; Vasan et al., 2023) and substance use (Morris & Onyegesi, 2025). Social isolation was particularly more prevalent during the time of interviews due COVID-19 related restrictions.

Moreover, social contact boosted motivation to exercise. The majority of multi-problem young adults preferred exercising with others, whereas a minority mentioned disadvantages of team-based exercise, particularly when team functioning was below expectations and resulted in conflicts. It follows that some young adults preferred solitary exercise. However, even this minority valued the presence of others in their surroundings while exercising, suggesting that indirect social involvement may bring about positive psychosocial outcomes. These findings are striking when put in contrast to literature suggesting that young adults who have experienced adverse life events may be reluctant to trust others (Aebi et al., 2022; Tsomokos & Slavich, 2024). A potential explanation for the current findings lies in the accessible social interaction provided by physical exercise.

In the context of prerequisites for physical exercise (theme 5), motivation stood out as

a key factor to derive its benefits. Participants' response indicated a positive bidirectional relationship between motivation and mindset. Sports coaches and social workers reported that a strong mindset cultivated through physical exercise has the potential to alter the often less favourable outlook of on the world observed in multi-problem young adults and other vulnerable young adults (de Vries et al., 2025; Noble-Carr et al., 2016). This mindset aids them in the development of problem-solving skills and stimulates complex thought processes regarding concepts such as responsibility, which increase in importance during the transition towards adulthood (Arnett, 1998, 2000, 2007). Nevertheless, individual circumstances (e.g. a lack of self-esteem, a lack of time, a lack of mental space, injuries) influenced engagement in physical exercise for some multi-problem young adults. The variety of these conditions highlight the importance of tailor-made physical exercise to maximize the benefits of physical exercise.

To enhance the effectiveness of physical exercise, sports coaches accounted for individual differences and personal circumstances by providing tailor-made sports programs extending beyond the physical domain to psychological and psychosocial coaching. Focusing on psychological factors besides physical benefits from physical exercise, proved to be particularly beneficial (Strauch et al., 2019). In response, young adults expressed positive sentiments regarding the sports coaches and explicitly appreciated their guidance, expertise, and instructions. Sports coaches actively engaged in professional development, which may have played a key role in building their expertise and therefore in the guidance of the young adults. Previous studies have shown that the presence of sports coaches is not only crucial for the engagement and commitment in physical exercise (Braga-Pereira et al., 2024; Gu et al., 2023), but also for its effectiveness (Spruit et al., 2017), crime reduction (Kelly, 2012), psychosocial development, such as leadership (López de Subijana et al., 2021) and life skills (Cronin & Allen, 2018). For instance, regarding aggression, the influence of sports coaches

and sociomoral environment proved to be crucial (Spruit et al., 2017).

In the present study, coaches played a leading role in their program attendance, motivation, and sense of empowerment. Both sports coaches and social workers, but also literature explained this phenomenon through social learning theories (e.g. Bandura, 1963), where healthy role models and the behavioural mimicry support development (Kim & Shin, 2023; Ronkainen et al., 2019). The drive of the sports coaches to keep developing may have additionally contributed to the impact they had on the young adults. Moreover, social support has been shown to improve mental health and building self-esteem (Szkody & McKinney, 2019). Sports coaches and social workers provided a possible explanation through the informal nature of physical exercise influencing the teacher-student dynamic and balancing out power dynamics when coach and young adult exercised in the same team with shared goals.

Overall, the findings indicate that motivation and mindset are individual prerequisites playing crucial roles in the engagement of physical exercise. The climate of physical exercise becomes especially important given the value of sports coaches in exploiting the potential of physical exercise.

Interrelatedness between themes

Earlier, several interrelations and reciprocal feedback loops between themes were mentioned that influenced the analysis. To illustrate their complexity, a few examples of thematic overlap, among others, will be presented. For instance, some multi-problem young adults developed healthy habits through physical exercise, while their motivation to exercise was initially driven by the pursuit of an improved physical appearance. Over time, consistent exercise contributed to structure and routine, which was perceived to positively influence daily functioning. In this process, the domains of physical well-being, psychological well-being and psychosocial well-being became intertwined.

Similar interrelations have been observed in prior research, such as associations between negative psychological states and decreased psychosocial well-being (Baggio et al., 2016; Rodrigues et al., 2021), as well as healthy lifestyle behaviours (i.e. physical exercise, adequate sleep, nutritious diet, tobacco use) and mental health outcomes (Bourke et al., 2025b; Brown et al., 2022; Firth et al., 2020; Groves et al., 2024; Kleppang et al., 2024; Orchard et al., 2020). These interrelations should be considered, as boundaries between and within themes were difficult to distinguish, which complicated thematization and data interpretation. Further research may build on these interrelations, as they enrich the understanding of multi-problem young adults' experiences yet should be interpreted with caution. Nevertheless, the interrelations reflect the reality of multi-problem young adults' lives, in which their life domains are intertwined.

Limitations

Several limitations in study design and research procedure may have affected the robustness of the findings. First, the specific context of DNK combined with COVID-19 restrictions during the interviews may have influenced transferability. Furthermore, the multi-problem young adults in this study were recruited from the earlier RCT research (Van der Sluys et al., 2024), which distinguishes them from other multi-problem young adults in their willingness and openness to participate in research. This difference potentially shaped their responses in interviews. Likewise, social desirability may have shaped participants' responses by either overrepresenting positive experiences or underrepresenting stigmatized topics, such as substance use or delinquency. Therefore, the findings of the current study are intended to provide insight for similar contexts and populations, rather than generalization.

Second, in qualitative research researcher positionality is a key component that should be viewed critically. Thematization may be biased depending on the researcher's frame of reference (Goundar, 2025; Holmes, 2021). Although analytic memos were used to reduce

bias, data triangulation was minimal. Therefore, complete neutrality cannot be ensured.

Third, participants frequently reported that the study procedure may have influenced the attitudes and engagement of the young adults at DNK. For instance, sports coaches and social workers observed an increased drop-out at DNK during the period research was conducted. Multiple participants also noted that suboptimal timing and inconsistent frequency of the sports lessons as part of the study procedure affected engagement and consequently responses of the young adults. They suggested that the additional burden of the research on top of the existing demands of the program at DNK may have put too much strain on some participants. Furthermore, preferences of young adults were not taken into account during their placement to low versus high intensity groups of the intervention, which participants reported to reduce motivation. Future research should take these limitations into account to strengthen methodological rigour and research quality.

Conclusion

To conclude, the current study aimed to explore the attitudes of multi-problem young adults on physical exercise. Overall, the multi-problem young adults express positive attitudes towards physical exercise as it can promote development across several life domains, including physical well-being, psychosocial well-being, personal development and social well-being. However, certain conditions are essential to realize these benefits, such as motivation and a strong mindset, but even more so the presence of a reliable role model (i.e. sports coaches) who provides safety, trust and guidance.

The findings from the present study add on to a growing body of qualitative literature on physical exercise and vulnerable emerging adults and can be used in the development of future programs that use physical exercise as a supportive intervention in similar contexts and populations. Next to physical benefits from physical exercise, such programs should emphasize psychosocial aspects and the decisive role that sports coaches can play. To enhance

future research participation and bring about individual progress beyond research purposes, individual preferences of participants should be considered.

Consecutive research can build on the current study by examining effects on a deeper level or over a longer span of time. For instance, by comparing the role of distinct types of physical exercise on their attitudes or the effect of different coaching styles on their experiences of physical exercise. In sum, physical exercise has the potential to serve as a transformative tool for multiple developmental domains in the lives of multi-problem young adults.

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Appendix A

Topic list for semi-structured interviews with multi-problem young adults

Introduction

Study background and aim

Briefing on semi-structured interviews

Current situation

Physical and mental well-being

Living circumstances

Daytime-activities (e.g., hobbies, work, education)

Physical exercise

Current engagement in physical exercise and details

Motivation for people to engage in physical exercise

Perspective on physical exercise

Personal meaning of physical exercise

Do you think physical exercise can help young adults to cope with problems?

(question from Haudenhuyse et al., 2013)

How does physical exercise provide support? If not, has it provided support before?

Positive and negative experiences of physical exercise

How would your life look like without physical exercise?

Questionnaires

Socio-demographic data (e.g. age, weight, education)