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Secondary school students' perception of health and teaching of health dimensions in physical education

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ABSTRACT

Background: Physical education (PE) aims to promote health and strengthen students' health resources, and the concept of health is a central part of PE.

curricula. However, little is known about how students understand health and experience teaching related to the concept of health in PE.

Purpose: This study aims to provide insight into how students understand the concept of health and how they experience and perceive teaching about health dimensions in PE.

Participants: A sample of 10th graders was recruited from two primary schools in Norway.

Data collection and analysis: Three focus group interviews were conducted with 12 students (5 boys) in 10th grade (15-16 years old). The first focus group consisted of five girls, the second of four boys, and the third of two girls and one boy. The students were asked to reflect on and discuss what health is, how it can be promoted, and their experiences of learning and teaching health in PE. The interviews were recorded using a voice recorder and lasted for between 40 and 55 min. The transcripts were analysed using reflexive thematic analysis.

Analysis: Through the analysis, we interpreted that students mainly focused on the physical dimension of health but became aware of the mental dimension when they discussed and reflected during interviews. Overall, students found the term health to be complex and somewhat difficult to understand. The students experienced little or no development of their health competence through PE. Although they considered that it was important to learn about health, they were concerned that, if more learning about health was implemented in PE, this would make the subject more theoretical and result in less movement and practical activities. Further, the strong activity discourse in PE is discussed in relation to students' health perceptions.



Final reflections: Although curricula in PE seem to be developing towards a holistic perspective on health, students do not seem to understand health from this perspective. It seems that they encounter a biomedical approach to health and that PE teachers emphasize the physical dimension of health in teaching. The students' understanding of the concept of learning as theoretical and the teachers' instrumental teaching about health in PE could substantiate a narrow view of health in PE. To promote learning about health from a more holistic perspective, the learning focus of the subject should be highlighted. Furthermore, pedagogical approaches that aim to increase students' reflections and experiences of various dimensions of health through practical learning processes should be emphasized.

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1. Introduction

The importance of the adolescence period has at times been overlooked in discussions about health priorities, but recent research makes it clear that this period is crucial for the physical, emotional, cognitive and social resources that transfer into adulthood (World Health Organization [WHO] 2020). It is globally recognized that less than half of young people meet the recommendations for physical activity, and this declining activity level continues into adulthood (Bull et al. 2020). Additionally, there is an increasing concern about the declining mental health of adolescents worldwide, including reduced psychological well-being, increased distress, and loneliness (Kauhanen et al. 2023; Twenge et al. 2021), and this is partly connected to the use of social media (Braghieri, Levy, and Makarin 2022; Fumagalli, Shrum, and Lowrey 2024). School is one of the few places through which all children pass, and a supportive school environment and education are often mentioned as important factors in improving well-being, competencies, and skills to act to promote health (Jensen, Dür, and Bujis 2022). Health holds a central position within the physical education (PE) curricula internationally (Harris and Cale 2022), and it is generally accepted that a key goal of PE is to promote current and lifelong participation in physical activity and a health-promoting lifestyle (Cale 2021; Cale, Harris, and Hooper 2019). Although schools and PE play a central role in working with health, it is not always clear how to understand and promote health (Mong 2019). Health is a complex concept, and the understanding of health also affects how this is applied in teachers' planning and teaching (Korp et al. 2023; Mong and Standal 2022; Quennerstedt 2019a; Wiklander, Fröberg, and Lundvall 2023).

The understanding and didactic work of PE teachers regarding health in PE is characterized by the perception that health is understood differently (Cale 2021; Quennerstedt 2008; Tinning 2015), and the teaching is to a small extent based on theories or research on health (Mong 2019). While teachers may recognize health as a multifaceted and complex concept encompassing the physical, mental, and social aspects, these dimensions are often considered separately, leading to a lack of a holistic and comprehensive understanding of health (Korp et al. 2023). Despite awareness of the different dimensions of health, the emphasis in teaching tends to be on the physical aspect within the context of activity discourse (Cale, Harris, and Chen 2014; Korp et al. 2023; Mong 2019; Webb, Quennerstedt, and Öhman 2008). Finally, insufficient knowledge and appropriate pedagogies regarding health among PE teachers may impact students' health knowledge and learning outcomes (Armour and Harris 2013).

Students understanding of the concept of health also appears to be limited and narrow, with focus revolving around exercise, being slim and eating healthily, which are factors that are related to the physical aspect of health (Burrows, Wright, and McCormack 2009; Harris et al. 2018; Singletery et al. 2015; Warburton, Beaumont, and Bishop 2022). Students may also demonstrate a more comprehensive understanding of health by including mental and social dimensions (Mouratidi, Bonoti, and Leondari 2016), but this takes a back seat compared to physical risk factors such as obesity, alcohol and smoking. This indicates that students can adopt a holistic and comprehensive understanding of health, provided they have the time and opportunities for experience and reflection (Harris and Cale 2022). This must also be seen in the context of the fact that students – and partly also teachers – do not associate the subject with learning or knowledge, but more as a break from an otherwise theory-heavy and sedentary everyday school life (Lyngstad, Bjerke, and Ligestad 2019; Redelius, Quennerstedt, and Öhman 2015). Additionally, some students do not perceive health as topics in PE classes (Mong and Standal 2022).

1.1. Purpose

Limited insight exists into how students perceive health and experience health education in PE. Therefore, it is crucial to investigate students' understanding to enhance PE education and foster a holistic comprehension of health. This study aims to address this through the following research question: 'How do students understand and experience teaching health dimensions in physical education?'

2. Health perspectives in physical education

Tinning (2015) distinguishes broadly between two groups with contrasting views on the approach to health in PE. The first group, known as the ‘instrumentalists’, believes that PE should primarily focus on teaching students how to improve their health and equipping them with strategies to prevent negative health outcomes, such as obesity. The instrumental approach is often characterized by a pathogenic or biomedical view of health represented by an individualistic, dualistic and physical focus on health (Quennerstedt 2019a). The biomedical perspective has been a dominant framework for understanding health in PE (Kirk, Macdonald, and O’Sullivan 2006). However, there has been increasing criticism of this narrow understanding, as it primarily emphasizes the physical aspects of health and frames physical activity mainly as a means for disease prevention within an activity discourse (Kirk, Macdonald, and O’Sullivan 2006; Quennerstedt 2019a; Wiklander, Fröberg, and Lundvall 2023).

The second group, known as ‘educationalists’, advocate for a broader sociocultural perspective on health and argues for an educational approach to health, as the primary goal of PE should be educational in nature rather than mainly related to promoting health (Tinning 2015). In this context, the salutogenic model is suggested as an alternative and holistic approach to health in education (Jensen, Dür, and Bujis 2022; Lindström and Eriksson 2011) and PE (Mong and Standal 2022; Quennerstedt 2008).

Salutogenesis and a salutogenic orientation can be seen as an overarching theory (Jensen, Dür, and Bujis 2022), and the concept of salutogenesis revolves around understanding the factors that contribute to health and well-being, as opposed to focusing solely on disease and its causes, which is known as pathogenesis (Lindström and Eriksson 2015). According to Lindström and Eriksson (2011), salutogenesis encompasses both physical and mental health, as well as social and spiritual dimensions, and emphasizes the interconnectedness between the individual and the environment. According to Antonovsky (2012) individuals who possess enough generalized resistance resources (GRRs), and know how to utilize them effectively, are more likely to develop a strong sense of coherence (SOC). A strong SOC is characterized by a life orientation that enables individuals to view life as comprehensible, manageable, and meaningful, ultimately reducing the perceived stress of daily life (Antonovsky 1996). These GRRs can be both internal, within the individual, and external, encompassing their immediate and broader environment, including both material and non-material aspects like social support, coping strategies, self-efficacy, access to healthcare, education, employment, and economic stability (Mittelmark and Bauer 2022). That an individual holds a preventive health orientation – like eating a healthy diet or participating regularly in physical activity – can be considered as an internal GRR (Moyers and Hagger 2023). GRRs are seen as assets that empower individuals to manage stressors and maintain a sense of well-being, resilience, and health despite facing challenges or adversities (Lindström and Eriksson 2015). Quennerstedt (2008) proposes that the salutogenic approach could be an effective way to encourage a broader dialogue on the concept of health and its integration into PE. Mong and Standal (2022) argue that health can be viewed as a didactic phenomenon where the didactic work can be based on a holistic approach. For example, what do students consider as an important GRR for them (e.g. self-efficacy) and how can this be learned about/strengthened in the PE lessons (e.g. by mastery of movements and right challenges), or how can the environment contribute to create GRRs (e.g. establish a process-oriented learning climate.)

The key lies not in the mere presence of resources, but in the ability to use the resources for the development of a strong SOC. SOC can be viewed as a learning journey in which individuals engage with others and acquire knowledge through life experiences, enabling them to effectively learn to find the best conclusions in various situations, thereby fostering the development of both health and SOC (Lindström and Eriksson 2011). In this way, the SOC plays a role in influencing one’s position along the health Ease/Disease continuum (Mittelmark and Bauer 2022).

2.1. Context of the study

Norwegian students are generally satisfied with their own lives and health, but mental health problems, especially related to perceived stress and pressure from school and social media, increase during adolescence (Bakken 2022). In the Norwegian National Curriculum for primary, lower secondary and upper secondary education (LK 20; Ministry of Education and Research 2019), emphasis is placed on health, public health and life skills as a natural and central part of PE. The subject should contribute to knowledge about various perspectives on health, promote a positive self-image and teach students to manage their own health as a resource. Health is highlighted as a concept in the competence goals, core elements and purpose of PE. The subject should develop students' competence in exercise, lifestyle and health, and motivate students to maintain a health-promoting lifestyle throughout their lives (Ministry of Education and Research 2019). Furthermore, physical activity and mental health should be considered in conjunction, and students are expected to explore, understand, and reflect on the connection between movement, exercise, health, and the body. The curriculum can be understood from a holistic perspective on health, through a health-promoting and resource-based focus, emphasising the various dimensions that constitute health (Danielsen 2021). Whereas in previous curricula and government reports, where there has been a greater focus on the physical dimension of health, today's overarching guidelines and specific subject curricula allocate more space to mental health (Ministry of Education and Research 2019). In this way, the salutogenic approach is apparent in how health is defined both in the Norwegian core curriculum and the PE curriculum (Danielsen 2021).

Nevertheless, the curricula provide neither clear definitions of comprehending health nor guidelines on how to practically work with a concept (Annerstedt 2008). The inclusion of overly general descriptions of goals and concepts in curricula can result in poor implementation of the objectives in practice (Herold 2020). Consequently, the competence objectives may not be effectively translated into practice, impacting the students' learning and grasp of the curricula (Goodlad 1979).

3. Methodology

This study, adopting a constructivist perspective, investigates a group of students' views on health and their PE instruction experiences.

3.1. Participants

Invitation to participate in the study were sent per e-mail to rectors/teachers/inspectors at 22 schools in two different regions in Norway, of which two schools were accepted to be included in the study. The selection of these two regions was based on convenience considerations (geography). Strategic selection of informants is common within qualitative interview studies (Tjora 2018), and the potential informants that were considered able to speak and discuss reflectively related to the topic, were contacted by their PE teacher. We acknowledge that this selection process can hamper study quality by introducing confirmation bias, reducing diversity, and raising fairness and equity concerns since not all students were asked to participate. Twelve students agreed to participate in the study. Only students from 10th grade were invited to participate, as explicit competence objectives related to health are explicit post-10th grade. Three focus group (FG) interviews were conducted: the first with five girls; the second with four boys; and the third with two girls and one boy. Groups one and two came from the same school, and group three came from a different school.

3.2. Data generation

To uphold the study's objectives, it was necessary to adhere to the principles of semi-structured interviews. A semi-structured interview, using open-ended questions, allowed the informants the

opportunity to elaborate on their opinions and understandings (Brinkmann 2013). This provided a balance between structure and flexibility, allowing the researchers to guide the conversation while still allowing for in-depth exploration of the participants' responses. We focused on creating a relaxed and familiar interview environment by, among other things, conducting the interviews at the students' schools. This is especially important when interviewing children, where the power balance between children and adults is uneven (Kvale and Brinkmann 2021). The aim was for the group sizes to be large enough for the students to build upon each other's thoughts and opinions, while also being small enough to ensure that no one got lost in the crowd. A group discussion can bring out different associations and thoughts than a one-on-one interview (Cohen, Manion, and Morrison 2018) as the interactions among participants can lead to the emergence of diverse perspectives, experiences, and opinions on a particular topic, and participants can build upon each other's responses, offer different viewpoints, and engage in discussions that can lead to deeper insights (Kvale and Brinkmann 2021).

An interview guide, aligned with the research question, framed the discussions for data collection. Example questions from the interview guide were: 'What do you think contributes to good health?' and 'What do you learn about health in physical education?'. The interviews, lasting for 40-55 min, were recorded, and transcribed promptly, starting on the day of the interview, and concluding one week after the final interview. All students participated in FG discussions, ensuring diverse contributions on key topics.

3.3. Data analysis

In this study, we relied on reflexive thematic analysis (RTA: Braun and Clarke 2022, 2024). RTA was chosen as a guide as the analytic interest was on how personal experiences are located within wider sociocultural contexts, and the goal was to identify patterns in the data, to describe and interpret those patterns, and to provide a theoretically informed interpretation of them (Braun and Clarke 2022). An essential element of RTA lies in acknowledging that the researcher's position and contribution are vital, inevitable, and fundamental to the process. The research team consisted of a diverse group, including one master's student and two experienced teacher educators and researchers. These educators brought many years of experience in both teaching PE in schools and conducting educational research, particularly in PETE. Reflexivity entails utilizing personal experiences, existing knowledge, and social positioning, including ethnicity, gender, class, etc., to critically examine how these factors impact and enrich the research process, leading to potential insights into qualitative data (Braun and Clarke 2019, 2022; Trainor and Bundon 2021), and this perspective was brought into the whole analytic process among the researchers acknowledging their expertise of the field, their social position and experiences both as PE teacher educators and researchers.

Initially, we familiarized ourselves with the dataset and highlighted intriguing statements in the transcripts. Through an abductive process, the selected theoretical concepts partly framed the analysis, where using RTA deductively involved existing research and theory acting as a lens through which we analysed and interpreted data (Braun and Clarke 2021). At the same time, we were also open to the possibility that themes not previously considered could emerge, and by coding both latent and semantic aspects, the inductive perspective was retained in the analysis. The coding and theme development process had both descriptive and interpretive elements, as described by Braun and Clarke (2022). The descriptive element represented what the students said, while the interpretive element drew on the researchers' subjectivity to evaluate less directly evident patterns, which could be influenced by factors such as social context or personal feelings. As recommended by (Nowell et al. 2017), the thoughts that the researchers brought into the data collection were documented by noting initial analytic thoughts, interpretations, and questions to mark the beginning of data analysis. After the initial coding, we looked for larger patterns across the dataset to create tentative and final themes. A 'catalogue' of themes and sub-themes with corresponding codes and student quotes was established (see Table 1). These helped us adjust theme titles, boundaries, and

Table 1. Selected quotes from students, codes, tentative themes, and final themes.

Student quotes	Codes	Tentative themes	Final themes
<i>Be active sometimes That the body is doing well. And that it is not ill.</i>	Be physical active Not being sick	Health is training for the absence of illness	Physical health comes first
<i>To have good health? Don't eat so much unhealthy food. I feel we should get more of that learning at school. Because it is very important to eat well and have good health</i>	Eat healthy food Healthy food gives good health	Health is diet	
<i>Maybe just get a break from just theory and such.</i>	PE is different and a sanctuary. PE is activity	Theory in PE is not good	The strong activity discourse
<i>Yes, but I don't know if I really want to do more theoretical PE.</i>			
<i>Perhaps more in Food and Health. Then we learn about diet and such. About vitamins and nutrition</i>	Health belongs to other subjects	Do not learn about health in PE	
<i>We had another task about body image in 8th grade, but that's all we've had</i>	We only learn about ourselves		
<i>And I just think, really, for mental health, it's very good to have people around you who support you, so you feel like you have people who are fond of you</i>	Social support	Social health fosters well-being	To feel good about oneself and others
<i>If you are happy, I feel you are in good health</i>	Happiness is good mental health		
<i>If you see a lot of attractive people and you maybe don't feel so attractive, that can indeed affect you</i>	Perfection in social affects me.	Social media affects self-image	
<i>Everyone is like supporting body positivity And slightly bigger people who shake their stomachs and such</i>	Body positivity		

positions, ensure data fit themes, and provided practical assistance in the writing process. We developed ideas about what experiences students described and assessed relationships between these experiences to make sense of them alongside previous research and through the framework of a holistic view of health. Writing was an integral part of the analysis and helped us refine the boundaries of themes, note more latent patterns, and assess how themes and their content were interconnected.

3.4. Trustworthiness

In our efforts to conduct thorough research, we placed significant emphasis on establishing a clear connection between the data and our conclusions. Each step in the coding and theme development process was carefully documented to ensure traceability and rigour in the research. By providing a thorough description of the analysis, including concrete descriptions of the link between data and themes (Table 1), the credibility of the study was strengthened (Braun and Clarke 2021; Nowell et al. 2017). Braun and Clarke (2019) also emphasize the value of having multiple researchers in the analysis process, making it collaborative and reflexive, designed to develop a more nuanced and rich interpretation of the data, rather than seeking agreement on meaning. Guided by Fejes and Thornberg (2015), we aimed to be both creatively and critically minded, posing questions such as 'How systematic is the analysis?' and 'Are the results well-grounded in the data?' (p. 258). In sum, the trustworthiness of the study was strengthened through a transparent description of the entire process, with authenticity, inclusivity and openness at its core (Dahler-Larsen 2008). This level of transparency is crucial for any reader to be able to assess the relevance and applicability of our findings in their own context (Braun and Clarke 2022).

3.5. Ethical considerations

The study was conducted in accordance with the Declaration of Helsinki and received approval from the Norwegian Agency for Shared Services in Education and Research, SIKT (project number:

893118). Before the interviews, an information and consent form was provided, and guardians signed a consent statement for participation. Personal data was stored in accordance with relevant laws and guidelines, and audio files were deleted after transcription and anonymization, and names were replaced with pseudonyms.

The informants were 15 or 16 years of age at the time of participation and are therefore considered children, with a special requirement for protection. To provide students with a sense of security while allowing them the freedom to express themselves, the students' teacher was also present when the researcher met the students for the interview session, and the teacher stated that he/she was available to be contacted during the interviews if needed.

4. Analysis

The data analysis resulted in three themes that, together, were intended to help us address the research question: 'How do students understand and experience teaching of health dimensions in physical education?' Further, the themes will be presented with representative student statements followed by an overall discussion that examines the themes in the light of previous research, governing documents, and the theoretical framework of the study. This involved analysing how our interpretation of the data aligned with or challenged existing perceptions of the holistic view of health, and how the students' perceptions contributed to advancing our understanding within that theoretical framework. Furthermore, we sought to draw connections between the empirical data and the broader theoretical context, offering explanations for observed patterns or phenomena.

4.1. Physical health comes first

It became clear in the data that the students primarily think of the physical dimension when they reflect on the concept of health. The students discussed exercise and its connection to health extensively, emphasizing its crucial role in maintaining good health. At times, students mentioned exercise and physical health as being the same thing, where students described a person who exercises a lot as a person with good physical health, and a person who does not exercise as a person with poor health. 'So, it doesn't seem like he trains that much, so his physical health isn't that great ... If you're in good health as an athlete, it's more likely you're in very good health (Ragni, FG 1). In the statement about an athlete with 'very good health', Ragni referred to how athletes who often train a lot and are in good physical shape are an example of someone in very good health. Little mention was made by the students of factors other than exercise that affect physical health, apart from illness – as one student stated: 'But you can get bad physical health from cancer. Those who have had cancer, they can hardly run a hundred metres' (Tale, FG 1). Linking the physical dimension of health to movement and exercise is consistent with the findings of previous research on children's understanding of health (Warburton, Beaumont, and Bishop 2022). Furthermore, we interpreted the students' understanding of health to also be strongly connected to diet – as one student stated: 'To have good health? Don't eat so much unhealthy food. Be active sometimes' (Mathias, FG 3). The fact that food and exercise are the first things pupils mention when they talk about what health is coincides with the findings of international research (Harris et al. 2018; Singletary et al. 2015).

PE teachers seem to understand health as a composite and complex concept, but that, to a substantial extent, it is the physical aspect, especially related to exercise, that is promoted in the lessons (Mong 2019). That students also seem to emphasize the physical aspects of health, such as exercise and healthy eating could also be due to a lack of knowledge and appropriate pedagogies related to health among PE teachers (Armour and Harris 2013). It's positive that the students recognize the significance of exercise and healthy eating for their well-being. However, it's also concerning if they prioritize these aspects to the exclusion of others that contribute to overall health (Burrows, Wright, and McCormack 2009; Warburton, Beaumont, and Bishop 2022). That physical activity is important for physical health is well documented (Bull et al. 2020). Although the recommendations for

physical activity also involve high intensity three times a week, everyday activities constitute the largest part of the recommendations for physical activity (World Health Organization [WHO] 2020). The fact that most students largely link physical health to exercise, and to a small extent mention everyday activities of moderate intensity as health-promoting, can be linked to a biomedical view of health where more exercise and a higher heart rate will lead to better health (Quennerstedt 2019b). Based on our findings, content that reaches students through social media reinforces their beliefs about the connection between health, training, and physical exercise, consistent with findings from other contexts (Statista 2023). Thus, school – and PE – have a central role in educating students about how everyday activities such as active commuting to school and playing with others are an important health-promoting factor (World Health Organization [WHO] 2020) and derby strengthen their GRR (Moyers and Hagger 2023).

The complexity of the term health became apparent to the students during the interviews. Especially, in a discussion related to testing or assessing one's own health or that of others as expressed by Sissel, FG 3: 'Testing health, if you think of health as a whole, seems extremely difficult. Yes, because it is so complex'. Further, we interpret a strong activity discourse to result in students finding health to be complex and difficult to both understand and articulate.

4.2. The strong activity discourse

Our interpretation of the student responses is that they were situated in a PE subject dominated by an activity discourse. Students talking about not experiencing learning per se, nor wanting a focus on learning as they failed it would result in less physical activity inspired us to develop this argument. Lindström and Eriksson (2015) highlight the significant interplay between the environment and the individual in terms of SOC.

The students' responses show that they experienced little or no learning about health in PE. It appears that, at some point, they have had a PE assignment concerning body image, but apart from that the students have few or no examples. 'We had another task about body image in 8th grade, but that's all we've had' (Hanne, FG 1). The students point to other subjects such as Food and Health, Science, and the elective subject Physical Activity and Health where students learn about physical aspects of health such as anatomy, immune system, and nutrition, as Hans, FG 2 expressed: 'Perhaps more in Food and Health. Then we learn about diet and such. About vitamins and nutrition'. The students stated that health is not taught as a topic, but that it finds its way into subjects in the form of pieces here and there – as expressed by this student: 'No, there will be hints about it in a way ... or it touches upon many topics, so there is a bit here and a bit there. There's not like only one topic you know' (Sissel, FG 3).

The students in this study did not feel that PE teaches them anything, either about health or other things, apart from technique within various sports. Health is a central concept in the PE curriculum. If students do not feel that the subject develops their competence in health, an important part of the subject's content and goals is not achieved. The students point to other school subjects where the focus is largely on the physical and instrumental aspects. Students learn about nutrition, anatomy, and exercise. Similar findings can be found in other countries, where the PE curriculum's body-focused view of health is partly to blame for students' narrow focus on the physical aspect of health (Burrows, Wright, and McCormack 2009). Although the concept of health within the PE curriculum aligns with a holistic perspective (Cale 2021; Cale, Harris, and Hooper 2019), it is evident that students in this study did not grasp the notion of health from this vantage point. The international recognition of the phenomenon of poor implementation of objectives in practice is widespread (Goodlad 1979; Herold 2020). We interpret this to mean that they encounter a biomedical approach to health in PE. This is also consistent with research that suggests that PE teachers feel most comfortable teaching about the physical aspects of health, and therefore emphasize the physical dimension of health in their teaching (Mong 2019). When teachers plan and carry out lessons related to health, they are largely concerned with making students aware of the importance of the

health benefits of physical activity (Mong 2019). This may explain why the students did not understand or experience a holistic concept of health in PE. Moreover, when considering the acquisition of health knowledge as a GRR in accordance with the framework proposed by Mittelmark and Bauer (2022), there arises a contemplation concerning the potential shortfall experienced by youth in accessing essential assets vital for effectively coping with stressors and fostering a sustained sense of well-being, resilience, and health in the face of adversity – a concern beyond the lack of students' health knowledge and learning outcomes pointed to by Armour and Harris (2013). This underscores the significance of not merely possessing resources but rather the proficiency in utilizing them to cultivate a robust SOC, as elucidated by Lindström and Eriksson (2011).

Students said that they find this learning boring but understood that it is important to learn about health to live longer, to understand how others feel, and to prevent injuries or other health problems, as expressed by Marita, FG 3: 'It's more boring [than other parts of PE]. Perhaps we should learn about that'. When discussing which aspects of health, they should have learned about in PE, the students said that they wanted to know about injury prevention training, how to eat healthily and how to exercise to stay fit, and to learn more about why and in what ways the content of PE lessons is health-promoting.

Yes, because in PE, we don't learn much about what it does for us, what we do. Maybe learn like that why you should do it not just like that, you should do this and that because it's good. It's like, why is it good for me, like? (Marita, FG 3)

The pupils seemed to want to understand more about why they were doing what they were doing in PE lessons, so that they could gain practical knowledge that could be applied at home or outside of school. At the same time, the students were clear that they did not want to include health in PE, because that would make the subject more theoretical and result in the loss of two hours of activity, as expressed by Hans, FG 2: 'Yes, but I don't know if I really want to do more theoretical PE'. The informants stated that they were happy to be active and were enjoying PE. They were not keen on the idea that the only subject that gave them a break from the theoretical subjects, where they could work out and be physically active, should be changed to involve learning in the form of more theory. These opinions align with findings in other studies, (e.g. Larsson and Karlefors 2015; Lyngstad, Bjerke, and Ligestad 2019), concluding that PE is perceived as a break from the more theoretical subjects and is not seen as a subject whereby learning occurs. This may be one of the reasons why the students did not intuitively connect the subject to learning – for example, learning about health. In PE, we communicate knowledge and learning, not only through what we teach, but also through how it is taught. In this context, in an 'educational' view (Tinning 2015), health can be approached as a didactic phenomenon. For example, emphasis on coping and belonging as well as rising students' awareness and reflection on how these assets may contribute to their GRRs and how they can be used effectively to promote their own health and well-being (SOC) (Antonovsky 2012) could integrate health in PE in a broader way (Mong and Standal 2022; Quennerstedt 2008). In PE, it is important to recognise other forms of learning, such as physical and practical learning (Quennerstedt et al. 2014). Working with health in PE involves not only imparting knowledge to pupils about looking after their own health, but also the promotion of health and life skills in teaching and the classroom environment (Harris and Cale 2022; Ministry of Education and Research 2019). Although learning may look different in PE, the subject must be a subject of learning and the purpose, desired outcomes and content of the teaching should be in focus (Mong and Standal 2022).

Students' perceptions of learning about health in PE may be influenced by their understanding of the concept of learning. Despite an ongoing assignment concerning body image and social media (undertaken independently without formal classes), the students, when asked, denied learning about health in PE. Their association of learning with theoretical instruction from teachers contributed to this response, highlighting a gap in their understanding of what should be taught in PE. This lack of understanding aligns with findings in previous research (Redelius, Quennerstedt, and

Öhman 2015). Learning is a complex concept but is often linked to theoretical teaching and instruction from the teacher (Quennerstedt 2019b). If teachers have an instrumental view of learning, and a biomedical view of health, learning is often seen as something that should be transferred from teacher to student through knowledge sharing (Quennerstedt 2019b). The sharing of knowledge about health is then mainly about informing pupils about risk factors for health, and further increasing pupils' physical activity to prevent illness and obesity. This instrumental way of approaching health is reflected in PE practice (Cale, Harris, and Chen 2014; Korp et al. 2023; Mong 2019; Webb, Quennerstedt, and Öhman 2008). Quennerstedt (2019b) questions whether this is learning, and whether it contributes to lifelong learning for students. He is sceptical of how the instrumental view of learning can contribute to promoting a narrow view of health, which creates an image of what is the right and wrong body and creates a clear distinction between health and illness.

4.3. To feel good about oneself and others

For most of the students, although it took a bit of time, mental health eventually came up in all the interviews – as shown in this quote: 'So, I kind of thought about physical health when I think of health, but it's actually mental as well' (Andre, FG 2). Friends were also mentioned as an important factor for promoting health by some students, but it seems that friends were important for various reasons. Some of the students agreed that friends have an intrinsic value for mental health – as expressed here: 'And I just think, really, for mental health, it's very good to have people around you who support you, so you feel like you have people who are fond of you' (Sissel, FG 3). We interpret these expressions as possibly indicating that the students' GRRs could be contributing to their SOC (Mittelmark and Bauer 2022).

In addition to friends and physical activity, students also mentioned how a person's genetic predisposition, illness, and ability to handle life's challenges can influence their health or their potential for good health. In some conversations, the perception of health also included how one's body image and self-perception are part of one's health, and that social media can affect self-perception – as described by this participant: 'If you see a lot of attractive people and you maybe don't feel so attractive, that can indeed affect you' (Sara, FG 1). But this group also talked about how social media can be a positive thing in this context – as expressed by these participants: 'I actually feel that social media has helped to improve it [people's body image] because of what people tend to post' (Hanne, FG 1), and 'everyone is like supporting body positivity And slightly bigger people who shake their stomachs and such' (Tale, FG 1). This demonstrates students' ability to take a more comprehensive understanding of health (Mouratidi, Bonoti, and Leondari 2016) when given opportunities for reflection and experiences (Mong and Standal 2022).

The students mention social media as a source of information about health in connection with body image and self-image but seem to dismiss the idea that it has any effect on their knowledge or view of health. At the same time, it is known that children and young people spend several hours each day on social media (Bakken 2022; Statista 2023). The fact that students dismiss, or are critical of, social media as a credible source of information about health can be seen as positive, as it is known that social media creates an image of a body that exists to look good and creates an external focus on the body and identity (Goodyear et al. 2021). At the same time, it can testify that the students, in accordance with previous research (Braghieri, Levy, and Makarin 2022; Fumagalli, Shrum, and Lowrey 2024), are naive about how much they are influenced by social media. If students are affected more than they are aware of, and it is known that social media can have a negative impact on students' health and understanding of health, it becomes even more important for the school and PE to come into play to counteract such unfortunate tendencies. It is therefore challenging that the pupils feel that PE contributes to the development of their competence in health and health promotion to little or no extent.

5. Final reflections

The purpose of this study was to gain insight into how students understand the concept of health and how they experience and perceive teaching about health dimensions in PE. Our analysis showed that the students mainly had a biomedical perspective on health, where the physical dimension was most prominent. However, the students showed that their understanding could also encompass other aspects, such as the mental dimension. Overall, the students thought that the concept of health was complex to understand and that there was little or no teaching or learning about health in PE. The students reasoned that it was important to learn about health, but they worried that an increased health focus could make the subject more theoretical. Even though PE curricula seem to be developing towards a holistic perspective on health, it does not appear that the pupils understand health from this perspective. This is consistent with research that suggests that they encounter a biomedical approach to health and that PE teachers place emphasis on the physical dimension of health in their teaching. Hence, students' understanding of the concept of learning as theoretical and teachers' instrumental teaching about health in PE underpin a narrow view of health in PE. The cultivation of health resources and competency regarding health matters among students stands as a central objective within PE (Cale 2021; Cale, Harris, and Hooper 2019). Therefore, the apprehension surrounding the potential shortfall in students' exposure to GRRs in the form of health knowledge, beyond the mere inclusion of statements within governing documents related to PE, is indeed concerning. This concern should serve as a catalyst for further inquiry into how these objectives are effectively realized across all tiers of the curriculum (Goodlad 1979). To promote learning about health from a more holistic perspective, teachers should clarify the learning focus of the subject. Moreover, pedagogical approaches aimed at increasing students' reflections and experiences of different health dimensions through practical learning processes should be emphasized.

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