

Abstracts presented at the Norwegian Public Health conference, October 24-25, 2024, Tønsberg, Norway

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The Norwegian Public Health Conference is a meeting place between researchers and practitioners 3

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Introduction



The Norwegian Public Health Association (NOPHA) was established in 1998, and is a membership-based, interdisciplinary national association that fosters collaboration between research environments, professional organizations, politicians, and the public, private, and voluntary sectors to improve public health. The association works to:

- Ensure health-promoting environments, good living conditions, and well-being for all groups in society, including reducing social health disparities
- Provide everyone with the opportunity to be active, do things together, and experience mastery and meaning in everyday life
- Influence the shaping of public health policy locally, nationally, and globally

Abstracts from the Norwegian Public Health Conference 2024

One of our most important achievements has been organizing an annual national public health conference since 2005. This conference has grown to become the largest of its kind in Norway, with 600-700 participants. It is an important networking and learning arena.

This year, the main theme of the conference is **“Mobilizing for the Future”**. In 27 parallel sessions, researchers and practitioners from across the country present their research and experiences on various sub-themes of the conference. 39 of the abstracts are written in English. These abstracts are presented in this issue, organized into the main sub-themes of the conference. Some are research abstracts (marked with an F), and others are practice abstracts (marked with a P). We would like to thank NOPHA member Johan Lund and the head of NOPHA Young, Linn Alvsvåg, for their contribution in editing the abstract chapters.

NOPHA, together with the other four Nordic Public Health Associations, owns the Scandinavian Journal of Public Health (SJPH). We are proud to present this Supplement issue of SJPH, containing the abstracts of research and practice presented at the Public Health Conference 2024 in Tønsberg. We hope it will reach a broader audience among our Nordic and international public health colleagues.

Annica Øygaard
Secretary General and
Chair of Conference Committee

Henriette Hovland
Board-member
Chair of Scientific Committee

The Norwegian Public Health Association

Platform Presentations at the Public Health Conference

From Farm to Table

I-04-F-M Optimizing Norwegian diets to meet NNR2023 and reduce environmental impact

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Background: Further knowledge of potential benefits and challenges linked to diets following the new Nordic Nutrition Recommendations (NNR2023) is critical to the development of revised food-based dietary guidelines for Norway. In the present paper, we aim to examine NNR2023 from a Norwegian perspective by: 1) investigating the environmental impacts of nutritionally optimized diets following NNR2023, 2) measuring differences in potential for environmental impact reduction across scenarios of meat consumption, and 3) identifying nutritional challenges.

Methods: A series of optimizations were run to optimize the Norwegian diet in terms of nutrition, health, and environmental sustainability. A quadratic programming model was used with an objective function of minimizing departure from the average observed diet of Norwegian adults (baseline diet), based on the national dietary surveillance survey Norkost 3 (n=1,787; 2010-2011). Nutrient and health constraints were derived from NNR2023. Environmental impacts (global warming potential, freshwater and marine eutrophication, terrestrial acidification, water use, and land use) were estimated according to a database of environmental impact data representative of the Norwegian market. First, the observed diet was optimized to meet requirements for nutritional adequacy, health, and acceptability. Then, stepwise global warming potential constraints were applied at 5% intervals, until no feasible solution was identifiable.

Results: Optimizing the baseline diet to meet nutrient and health constraints alone resulted in a modest decrease in climate impact. If additional constraints were applied to maintain intake of ruminant meat at baseline level, optimization of the diet to follow nutrient and health constraints did not reduce climate impact compared to baseline. The model including environmental constraints identified diets that met nutrient, health, and acceptability constraints, and reduced dietary climate impact up to 35% compared to baseline. The greatest reduction in climate impact was achievable when a daily portion of legumes was imposed as a hard constraint.

Diets with lower legume content were also identified and reduced climate impact up to 30% compared to baseline. Reductions in climate impact were achievable while maintaining intake of ruminant meat at baseline level, though feasible solutions were not identified beyond a 15% reduction in climate impact.

Conclusions: Adjusting Norwegian diets to follow NNR2023 guidelines may simultaneously result in environmental benefits, which is in line with NNR2023's mandate to consider environmental factors in guideline development. However, the potential for further reductions in environmental impact is dependent on distribution of meat consumption in the diet.

Main message: Promoting increased compliance with national dietary recommendations is one plausible step towards realizing sustainable diet patterns in Norway, especially if these recommendations integrate NNR2023.

I-07-F-M Healthy and sustainable food procurement in Norwegian upper secondary schools

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Background: Public procurement has the potential to accelerate the transition to a more sustainable food system by stimulating access to and demand for healthy foods and foods with a lower impact on climate and the environment. The present study investigates the nutritional quality and environmental impact of food procurement among upper secondary schools in south-eastern Norway. In addition, we examine changes in food procurement after one year of intervention for healthier and more sustainable school canteens.

Methods: Procurement data was obtained from upper secondary schools (n=36) in former Viken county (Akershus, Buskerud and Østfold), based on electronic invoice information about foods and beverages purchased for the school's canteens over a quarter in 2022. In a subsample, we have baseline and follow-up data after one year of intervention for healthier and more sustainable school canteens organised by former Viken county in collaboration with the guidance service "Matvalget" (n=8), and for control schools where no intervention was conducted (n=7). Extensive data processing of the procurement data was required before imported to the nutritional calculation system (KBS, version AE-22) at the University of Oslo. KBS enables simultaneous estimation of nutritional content and environmental impact of the procurement data. Data on six environmental impact categories were available: global

warming potential, freshwater and marine eutrophication, water use, land use, acidification.

Results: The nutritional quality of food procurements in the upper secondary schools was limited according to several nutrients, particularly vitamin D, folate and selenium. The food groups “Dairy” and “Meat and poultry” contributed most to overall environmental impacts. The purchase of beverages contributed with a quarter of the procurements in grams per 10 MJ, however, only to a small share of environmental impacts. Additional results will be presented at the conference.

Conclusion: Results suggest a potential for improvement of the nutritional quality and environmental impact of public procurements among upper secondary schools in former Viken county. Monitoring procurement data can provide valuable insights into how public institutions are working towards healthier and more sustainable public procurements. However, the procurement data is currently not suitable for this purpose without resource-intensive data processing. Standardised output from procurement invoice data is needed and could be a useful tool for promoting healthier and more sustainable diets.

Main message: Public food procurement as a tool for healthier and environmentally sustainable diets; current practices and opportunities for intervention in Norwegian school canteens.

I-09-F-M Norwegian children have many environmental contaminants in their bodies

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Background: Environmental contaminants are substances that can be harmful to our health. We are exposed to many of these substances on a daily basis. The health effects of environmental contaminants are underestimated and may pose a considerable threat to the health of present and future generations. Thus, there is a great need to monitor exposure to such substances in Norway. This is also relevant in light of ongoing climate change, which is assumed to alter our exposure to hazardous substances.

Methods: Participants in the Norwegian Environmental Biobank (NEB) were recruited among participants in the Norwegian Mother, Father and Child Cohort Study. Biological samples and questionnaire data were collected from triads of mothers, fathers and children in 2016-17. Here we present results from chemical analyses of the children’s blood and urine samples (n=669).

Results: The participating children were 7-14 years old. There was an even distribution between girls and boys, and the whole country was represented. We measured a total of 81 different environmental contaminants in the children, and for most of them the levels were well below what is considered safe. However, almost all children had levels of BPA that exceeded what the European Food Safety Authority (EFSA) considers safe, and for PFAS almost one third were above EFSA’s tolerable weekly intake. The measured concentrations of most of the environmental pollutants were similar to those seen in comparable European surveys. However, concentrations of PFAS were higher, and concentrations of acrylamide were lower in NEB.

Conclusions: The children participating in the NEB study in 2016-2017 had a wide range of environmental contaminants in their bodies. A considerable part had levels of BPA and PFAS above safe levels, which is of high concern.

Main message: In order to prevent adverse health effects there is a need to implement further regulatory measures to reduce exposure to certain environmental contaminants in the Norwegian population.

I-10-F-M Use of energy drinks among children and adolescents – a cause for concern?

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Background: Energy drinks (EDs) are non-alcoholic beverages with high caffeine content (320 mg per litre). Caffeine is a stimulant not suitable for children and adolescents in high doses because they tolerate less caffeine than adults, mainly due to lower body weight. Also, they are in a critical phase for physical, mental and brain development. ED consumption in children and adolescents is associated with sleep disturbance, higher level of stress, anxiety, and depression. The increasing sale and popularity of EDs in recent years and their potential health risks due to high caffeine content and low pH causing dental erosion, highlight the need for surveillance. The aim of this study was to assess the prevalence of current ED consumption and changes in ED use in recent years, in Norwegian children and adolescents aged 10-18 years.

Methods: We used data from two nationally representative surveys. In Ungdata, a total of 301,992 pupils in lower (~13-15 years) and upper secondary schools (~16-18 years) had answered the question “how often do you drink energy drinks?” in years 2017 to 2022. Additionally, FHI conducted a survey including 1,748 participants aged

10-18 years in June 2023 asking about use of EDs, high intakes, attitudes, influencing factors and perceived health effects.

Results: There was a significant increase in the proportion of ED consumers and frequency of intake among consumers from 2017 to 2022. In 2022, the prevalence of any ED use was 58% (95%CI: 57-59%) in 13-15-year-old adolescents and 36% (95%CI: 35-37%) reported weekly ED intake. These proportions were significantly higher in 16-18-year-olds. Among ED consumers, the average intake frequency was 2.4 times/week in 13-15-year-olds and 3.1 times/week in 16-18-year-olds. The ED survey in 2023 showed lower prevalence of ED consumption in 10-12-year-olds compared to older groups (16% reported any use and 2% reported weekly use). Among 10-18-year-old ED-consumers, the preferred can size was 500 mL in all age groups, and 33% responded that they had at least once consumed three or more cans within 24 hours. One in three had experienced adverse effects after ED intake, while 24% reported having experienced discomfort or other symptoms of dependency when not drinking EDs.

Conclusion: The use of EDs among adolescents in Norway is a cause for concern as both the proportion of users and the frequency of ED consumption are high and increasing. A significant number of adolescents have reported consuming high quantities of ED within a 24-hour period. The caffeine content in a single 500 mL can exceeds the tolerance level for sleep disturbances in persons younger than 18 years and will also surpass the tolerance level for general negative health effects in individuals weighing 53 kg or less.

Main message: The use of EDs is widespread among adolescents and contributes with caffeine amounts associated with adverse health effects. Regulatory measures to limit the ED sale to adolescents are needed.

I-13-F-M The activity program Food Jungle and its impact on food and meals at SFOs

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Background: After-school programs present significant potential as platforms for promoting healthy and sustainable food habits among children. However, these programs exhibit considerable variation in quality, content, and staff competence. The 'Food Jungle' activity program, aimed at after-school programs in Norway, seeks to enhance children's understanding

and awareness of food aligned with health and sustainability goals. The program comprises digital resources, monthly thematic content, activities, activity books-and materials. Additionally, digital courses are available for staff to enhance their knowledge and engagement in promoting healthy and sustainable food practices. This study aimed to assess the impact of participation in the Food Jungle program on the focus on factors related to healthy and sustainable food habits in after-school programs, and subsequently, on children's engagement and awareness.

Methods: A multi-method approach was employed, consisting of a digital questionnaire administered to after-school program employees in Norway (n=168) and semi-structured focus group interviews with children from four different schools. Interviews were conducted both before and after program implementation.

Results: The majority of participating employees reported an increased focus on fruits, vegetables, fish, whole grains, food waste, and seasonal food following their involvement in the Food Jungle program. Furthermore, employees noted improved efforts to involve children in food preparation and related activities. Word frequency analysis revealed that children mentioned a higher number, as well as a wider variety, of fruits and vegetables after experiencing the Food Jungle program.

Conclusions: Implementation of activity programs like the Food Jungle in Norwegian after-school programs appears to enhance attention to various aspects of healthy and sustainable diets and promote increased involvement of children in food-related activities.

Main message: Activity programs like the Food Jungle appears to enhance attention to various aspects of healthy and sustainable diets in after-school programs and promote increased involvement of the children.

I-14-F-M Diet is a contributor to environmental contaminants in Norwegian children

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Background: Environmental contaminants are unwanted substances from food, water, air, and consumer products that can be harmful to our health. A key component of the World Health Organization's definition of a sustainable diet is that the food we eat should be safe. Monitoring of the level of environmental contaminants we are exposed to through the diet is therefore important for food safety and the sustainability of our diets.

Methods: The Norwegian Environmental Biobank (NEB) is a sub-study of the Norwegian Mother, Father and Child Cohort Study (MoBa) that was established to monitor levels of environmental contaminants in the population over time and to study how these substances affect our health. In 2016-2017, levels of environmental contaminants in urine and blood samples were collected in NEB from 669 children in the age of 7-14 years living in different parts of Norway. Dietary data were collected through a questionnaire, which also included questions about use of personal care products, living environment and other lifestyle factors.

Results: The children in the survey had a diet primarily in line with the dietary recommendations from the Norwegian Directorate of Health, but the intake of vegetables, fruit and berries was lower than recommended. Most of the children had a wide range of persistent and non-persistent environmental contaminants in their bodies. Preliminary analyses indicated known associations between food intakes and contaminants, e.g., the association between fish intake and levels of per- and poly-fluoroalkyl substances (PFAS). Results from analyses of associations between dietary intake of triads of mother, father and child and the levels of environmental contaminants in the children will be available by August 2024 and presented at the conference.

Conclusion: Associations between dietary intake and environmental contaminants in children are important to monitor, as a sustainable diet should be both healthy and safe for current and future generations.

Main message: Monitoring of environmental contaminants and associations with dietary intake is important to secure a safe and environmentally sustainable diet.

Inclusive Workforce

2-01-F-M Cultural Variation in Hiring People with Disabilities

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Background: The vast majority of research regarding employment of people with disabilities has focused on supply side factors that involve characteristics of the people with disabilities. In contrast, this research focuses on the less researched demand side issue of the socio-cultural context. In addition, it responds to the “limited systematic research examining and comparing how country related factors shape the treatment of persons with disability”.

In this study, we explore the extent to which the socio-cultural context influences hiring of PWD through its effect on the disability inclusion climate of organizations.

Methods: To test the model, we conducted a cross-sectional study across four countries with very different socio-cultural contexts. Data were gathered from 266 managers with hiring responsibilities in Canada, China, Norway and France. Participants responded to an online survey that measured the effect of societal based variables on the disability inclusion climate of organizations.

Results: Results indicated support for the theoretical model, which proposed that the socio-cultural context influenced the disability inclusion climate of organizations through two distinct but related paths; manager's value orientations and their perception of the legitimacy of legislation regarding people with disabilities.

Conclusion: Our theory proposes, and we show support for two channels for the influence of the socio-cultural context – the legitimacy of legislation regarding PWD and the culturally related values of managers. We also suggest how future research could expand the model to include both supply side and other demand side characteristics in order to build a more comprehensive picture of the influence of socio-cultural context. From a practical perspective, organizations can benefit from understanding the link between the societal context and the climate in their organization. Organizations can influence the extent to which the work environment they create is enabling or disabling relevant to disability in a society. At the societal level, it is important to recognize the intermediate factors that influence the effect of legislation regarding the treatment of PWD has on actual practice in organizations. Organizations can respond to legislation in many ways ranging from active implementation of related practices to superficial or ceremonial acquiesce to requirements. Furthermore, by modelling best practices with regard to PWD organizations can be active agents for change in society as opposed to passive participants.

Main message: The socio-cultural context influences the disability inclusion climate of organizations through manager's value orientations and their perception of the legitimacy of legislation regarding PWD.

2-05-F-M Women's Health and Working Life

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Background: Even though Norway is one of the world's most equal oriented countries, working life is still divided by gender: Women have lower participation in working

life than men, they work more part-time, and they have higher sickness absence. Research has mostly focused on structural and cultural reasons for the gender differences, rather than the case that women and men have different biology and face different health challenges. In this project, we explore associations between women's health and female participation in working life, work ability and sickness absence. Further, we explore the associations' impact on public health and women's living conditions. Women's Health and Working Life, PhD-project by Marianne Gjellestad (2021-2024).

Methods: A systematic literature review provides a basis for investigation of the field. Further, we use qualitative methods to explore experiences: In-depth interviews with women in two samples (hospital nurses and high school teachers), focus groups with managers (from hospitals and high schools) and focus groups with general practitioners.

Results: The project's first article (2023) summarizes international research on women's health and working life over the last 10 years. Hormonal changes and life stages, pregnancy and reproduction, chronic disorders and the complexity of women's health affect participation, work ability and sickness absence. Knowledge gaps are identified on extent, mechanisms and consequences. Article two (experiences from nurses and managers in hospitals) is in publishing process, submitted September 2023. Article 3 (experiences from teachers and managers in high schools) will be submitted March 2024. Results will be presented at the conference.

Discussion: Our material shows associations between women's health and women's participation in working life, work ability and sickness absence. Women's health is currently addressed to a very limited extent in the systematic work with health, safety and environment (HSE), or in working life in general, and the research will thus contribute new knowledge.

Conclusion: The associations between women's health and participation in working life are complex. Exploring women's specific health challenges in this context provides new knowledge about women's occupational health, public health and women's living conditions. This is an ongoing research project, with doctoral thesis to be submitted in August 2024.

Implications for practice and health promotion: With the aim of developing a more inclusive working life, new knowledge on women's occupational health can contribute to a basis for changes in health, safety and environment (HSE) systems and working life- and welfare programs.

Main message: New knowledge on women's health and working life can contribute to a basis for development and changes in health, safety and environment (HSE) systems and working life- and welfare programs.

2-07-F-P Workers' experiences with returning to work after cancer

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Background: Many cancer survivors (CS) experience long-lasting symptoms after cancer treatment, such as fatigue, depression, pain and reduced cognitive function. For workers, these symptoms may result in problems with returning to work. To help these workers return to work (RTW) some get support and supervision by job supervisors (JS) employed by the Social Welfare Administration (NAV) or by a work integration enterprise. The aim of this study was to explore CS' experiences in returning to work - with a particular focus on the support received from JS.

Methods: We interviewed in depth five cancer survivors who had received supervision by a JS and five JS who had supervised CS. Data were transcribed verbatim and thematically analysed in accordance with Brown & Clark (2021).

Results: Based on the data from both the CS and JS, three themes were identified: 1) Transition from being a patient to being a worker, 2) Social support, and 3) Collaboration between key stakeholders. Overall, the CS and JS had relatively similar descriptions of CS' resources, needs, and challenges. The CS were very motivated to RTW but found it difficult to accept their reduced work ability, and to relate to differing advice given by family, friends, doctors and NAV – ranging from “just apply for disability pension” to “you are healthy, just start working full time as soon as possible”. Despite conflicting advice, the CS felt they received valuable emotional support during their RTW process from their family, doctors, JS, as well as their employers and colleagues. Some employers were positive to adjust at work, but others were not – and particularly not if the adjustments lasted for long. Employers' understanding of late effects experienced by CS seem insufficient. NAV did not organize the standard Dialogue Meeting 2 for any of the CS, resulting in inadequate communication between important stakeholders (i.e., the CS, general practitioner, NAV, union, and employer). The CS described the support and help from the JS in very positive terms and regarded the emotional and instrumental support they received as crucial. Nevertheless, both CS and JS demanded more and better competence in, and collaboration between, health services, NAV, employers, and work integration enterprises when it comes to supporting CS in their RTW.

Conclusion: CS are very motivated to RTW, but the process may be difficult and long-lasting. There is a need of better collaboration and coordination of the RTW

process of CS with long-lasting late effects of the cancer treatment. RTW should be included in the Care Pathway for CS of working age.

Main message: There is a need of better collaboration and coordination of the return-to-work process of cancer survivors. Return-to-work should be included in the Care Pathway.

2-09-F-M Motivation and work engagement among female officers in the Army

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Background: For almost twenty years there has been an aim of having at least twenty per cent female employees in the Norwegian Armed Forces [Meld.St. 36 (2006-2007)]. This aim has still not been achieved, and only eleven per cent of the officers in the Army are women. Most research on female soldiers have focused on whether women can meet the physical and mental demands needed in war. Few studies have focused on the working environment of female officers. To our knowledge, no Scandinavian studies have focused on the work engagement of this group of workers. The aim of this study was to investigate the work factors female officers regarded as important for their work engagement and their motivation to stay in the Army until retirement.

Methods: Out of twenty-five female officers who volunteered to take part in the study, twelve were interviewed in depth with a semi-structured interview guide. The twelve interviewees were selected to give the participating population a variety in age, military education and geographical place of residence. The interviews were transcribed verbatim and thematically analysed in accordance with Kvale and Brinkman (2015).

Results: The analysis shows that the women's motivation for joining the Army was to have an active and challenging job with high physical demands. They held that the job had indeed given them challenging work tasks, and one reason for this was that they had got new work tasks through rather frequent changes in job positions. They appreciated that the physical demands were the same for the women as for the men. Early in their career, the (physically) active job and a feeling of mastery and development was motivating them. Later in the career, the peace keeping mission of the Army was one important factor for being highly engaged at work. It was challenging to find a suitable job-family balance because of much travelling and frequent changes in job positions. Therefore, the understanding and support from their

partners were crucial for their motivation to stay in the Army. The more experienced officers had searched and got support from the "Military Female Network" whereas the younger officers did not feel such a network was necessary or appropriate.

Conclusion: The female officers did not demand particular adaptations in work based on gender, but they claimed that the work must be organized in such a way that both men and women can have challenging work tasks and opportunity to make a career in the Army while establishing a family with children.

Main message: It is important for the Army to retain challenging work tasks for both male and female military personnel while giving them opportunity to have a stable family situation.

2-11-F-P Supporting Cancer Survivors' return to work: The role of physical therapists

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Background: The prevalence of cancer is on the rise, yet fortunately, advancements in treatment have led to improved survival rates. While the healthcare system excels in saving lives, there remains a crucial question: How effectively is the issue of quality-of-life post-cancer treatment addressed? Particularly, how do healthcare professionals tackle the complex intersection of patients' work situations? Despite reports from cancer survivors (CS) that discussions on work-related matters occur during treatment, the issue of return to work (RTW) lacks standardized follow-up procedures in the early stages of cancer care in Norway. Central guidelines underscore the importance of addressing the connection to the workforce for individuals of working age in all interactions within the healthcare system. This imperative extends to healthcare professionals, including rehabilitation experts such as physical therapists (PT). Research indicates that inadequate support from healthcare professionals may lead to adverse changes in working conditions, potentially impacting CS' quality of life. The aim of this study was to explore how PT address the issue of RTW when facilitating CS.

Methods: Qualitative data were collected through seven semi-structured in-depth interviews with PTs working in hospitals among three different enterprises in Norway. The data were analysed thematically.

Results: Three main themes emerged from the interviews: 1) "How to identify the issue owner of RTW" with subthemes of role clarity and professional competence; 2) "The need for tailoring", encompassing early

intervention, timeline sensitivity, and cross-sectional collaboration; and 3) “The importance of common ‘cancer and work’ knowledge” including the subthemes: knowledge of the CS’ employer, and knowledge of the CS’ profession. Overall, the PT described their role as unclear regarding RTW but recognized the relevance and importance of their competence in facilitating CS’ RTW processes. They advocated for extended care pathway for cancer and longer follow-up periods, allowing improved collaboration with municipal healthcare, Social Welfare Administration (NAV), and the enterprises.

Conclusion: Many CS express concerns about their ability to reintegrate into the workforce post-cancer treatment, fearing they may not cope with the demands of working life as adeptly as before. PT play an important role in facilitating functional improvements from the early stage of cancer care, crucial for RTW. However, the potential of PT to provide extended follow-up care is curtailed by structural limitations, thereby impeding an effective RTW process for CS. This underscores the pressing need to enhance existing structures to promote the health and quality of life of CS.

Main message: Physical therapists are vital in aiding functional recovery during cancer care, which is pivotal for cancer survivors’ return to work. Enhancing supportive structures can further optimize this process

2-15-F-M Personality, burnout, and turnover intention – a case for work life adaptation

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Background: Many professions requiring higher education, typically three-year college degrees, face challenges with retention and attrition, particularly in emotionally demanding fields like nursing, child welfare education, social work, and teaching. While employment strategies often emphasize work environment interventions as crucial, recognizing individual differences in personal characteristics can also play a significant role in preventing or managing burnout and turnover. Research indicates that the Big Five personality traits (Extroversion, Agreeableness, Openness to experience, Conscientiousness and Emotional stability) are linked to productivity and well-being. From a public health perspective, it is important to consider if differences in personality may affect other job-related outcomes such as burnout and turnover intention. Employees differ in their personality traits, and these differences ought to be acknowledged to optimize the capabilities of each individual employee to improve well-being. Aim: To identify personality characteristics that are associated with the work-related states Burnout and Turnover intention and

creating a parsimonious model of personality and work-related states.

Methods: Meta-analytic systematic literature study of associations between the Big Five personality traits (Extroversion, Agreeableness, Openness to experience, Conscientiousness and Emotional stability) and the work-related states Burnout and Turnover intention for employees with a three-year college education. Bivariate correlations between the variables of interest were collected from a total of 27 research articles (N=10753 employees) and analysed with meta-analytic structural equation modelling (MetaSEM).

Results: MetaSEM analyses indicated that Extroversion, Agreeableness and Openness to experience did not have any significant associations with Burnout, and none of the Big Five traits had significant associations with Turnover intention. The most parsimonious model was found to be a mediated regression model where Conscientiousness (B=-0.12, 95% CI [-0.22, -0.03]) and Emotional stability (B=-0.45, 95% CI [-0.56, -0.34]) were associated with Burnout, and Burnout then was associated with Turnover intentions (B=0.46, 95% CI [0.40, 0.53]). The model had good fit to the data (Chi (df=2) =0.96, p=0.62).

Conclusion: The personality traits Conscientiousness and Emotional stability are directly associated with Burnout and indirectly associated with Turnover intention for employees with a typical three-year college degree. Some employees are thus more vulnerable to burnout and turnover, and the workplace should take this into consideration in workplace health promotion initiatives.

Main message: Tailoring work environmental initiatives to individual differences could contribute to reduced burnout and turnover intention thus increasing workplace retention and employee well-being.

2-18-P-M Racism at work – Experiences from the resource group for nurses

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Issue: Emerging evidence in recent years indicates that nurses experience racism at work in the Norwegian Health and Care Services. Nurses face racism from patients and their relatives, but also from colleagues and managers. These experiences can lead to anxiety, depression, disempowerment and thoughts of leaving the profession. Many nurses do not report these incidents of racism. Routines for follow-up and support from managers and colleagues are not yet established.

Description of the project: 15 nurses of migrant origins with experiences of racism at work were invited to join a resource group, organized by the Norwegian Nurses Association (NSF). Four meetings were arranged and led by the project team with expertise in the field of racism, discrimination and health. The main goals of the meetings were to provide a safe space where nurses could share their experiences, receive support, validation, and to discuss the challenges and possible solutions to workplace discrimination and racism in nursing at different arenas and levels. In addition, the activities aimed to increase their knowledge of possible psychological consequences of racism and coping strategies.

Results: The majority of the participants reported that incidents of racism are downplayed and not taken seriously by managers, colleagues, teachers, fellow students in nursing schools, or HSE and union representatives. Spaces for discussion about racism are non-existent and there are virtually no support mechanisms for nurses confronting racism. Challenges and possible solutions were identified and discussed in three different arenas: in nursing education, “bedside” at work and at the organizational level in the health services and the NSF. Racism is not recognized as a workplace challenge and its effect on the health and wellbeing of nurses has been ignored. Knowledge and diversity competence are needed among managers and staff, but also routines and guidelines for handling incidents of racism must be put in place.

Lessons learnt: This pilot initiative created a safe supportive space and an important forum for sharing experiences. The participation of all the nurses in the resource group provided valuable insights into the challenges and possible solutions to racism in nursing care. Future initiatives will be able to build on this knowledge to aspire towards zero tolerance for racism and discrimination in nursing education and the health services in Norway.

Main message: Racism in nursing is a common, however, ignored challenge. This undermines gender and racial equity. Racism affects the health, belonging, and professional motivation of nurses of migrant origin.

When Youth Take the Lead

3-11-F-3 Pupil participation in a Food and health lesson in 9th grade: Effect on learning

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Background: Level of pupil participation in the school subject Food and health could potentially influence

pupils’ ability to find, evaluate and use food related information, and thus future health.

Method: A between-subject classroom-based intervention was performed, with moderate or high level of pupil participation in the planning of a practical kitchen session on seasonal vegetables. Thirteen home economics classes from one lower secondary school were randomly assigned to each intervention. Pupils answered a questionnaire on objective and subjective knowledge and perceptions on learning two weeks and seven months after the intervention.

Results: Results showed that multiple choice answers on factual knowledge did not differ between groups. The high pupil participation group demonstrated significantly higher knowledge on budget and received a higher score on open questions compared to the moderate group, both two weeks and seven months after the intervention.

Conclusion: The high pupil participation group agreed more with statements reflecting subjective knowledge, and high pupil participation influenced pupils’ perceptions significantly regarding statements that they learn more when participating in the planning process, and that what they have learned in Food and health affects their ability to make sustainable food choices in the future. Further studies on the effect of pupil participation on other aspects of learning should be performed.

Main message: The food and health subject is important to convey knowledge and good food practices in pupils. Teaching methods that support pupil autonomy can increase learning and thus influence future health.

The Good Life: Quality of Life and Health

4-03-F-M Housing qualities and wellbeing. Possible negative consequences of densification

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Background: People’s residence is an important prerequisite for health and wellbeing. In Norway the housing standard is generally high. However, the recent housing policy with an emphasis on efficient land use and the removal of requirements for housing qualities such as daylight and sunshine indoors can lead to a deterioration of conditions that are important for people’s health. The purpose of this study is to contribute to new knowledge about the relation between various housing qualities and subjective wellbeing. The study focuses on housing

qualities that provide an opportunity to strengthen and regain psychological resources in everyday life, such as security, being able to retreat and having privacy, and having the opportunity to rest and recover from everyday stress.

Methods: Our empirical analyses are derived using data from the Survey on Income and Living Conditions (EU-SILC) conducted in 2018 (N=5981). Two different measures of subjective wellbeing were used; affective wellbeing measured with the MHI-5 scale, and satisfaction with life (single question). The housing quality was identified both through qualities of the housing (disposition form, type of residency, subjective evaluation of the housing size, problems with daylight, access to terrace/balcony, problems with noise indoors) and the neighbourhood (access to garden, safe traffic conditions, problems with air pollution, noise or criminality).

Results: The main findings show that qualities of the housing itself are important for both affective wellbeing and life satisfaction, while qualities of the neighbourhood are primarily important for affective quality of life. Alongside living in a rental property and living in a house that is perceived as too small or too large, there is particularly a lack of access to daylight and problems with noise inside the home that contribute to a reduced wellbeing. Perceived problems with crime, violence and vandalism in the neighbourhood are associated with lower scores on both forms of wellbeing. In addition, unsafe traffic conditions and problems with air and noise pollution in the neighbourhood is associated with more negative affective wellbeing.

Conclusions: This study highlights the significance of people's opportunity to own their own residence, and not ease up minimum requirements for residence size and the access of daylight indoors. The noise level and traffic safety should be prioritized in residential areas. Many of the housing qualities that are associated with wellbeing in this study pose greater challenges in densely built areas. Thus, there is a risk if efficient land use comes at the expense of housing qualities. More knowledge is needed about the significance of different housing qualities for health and wellbeing.

Main message: The study is an argument for not ease up requirements for housing qualities in the densification of residential areas. This can lead to unstable living environments and negative social consequences.

4-04-P-M The New SUPER!! Program for Social and Emotional Learning

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MOT Norway

Issue: For at least 15 years, MOT Norway, who has programs for secondary school and high schools, has

received requests from schools to develop a program for primary schools. The development of a separate program for social and emotional learning aimed at grades 1.-4. in primary school started in 2020. The program was named SUPER!! and the pupils have a SUPER!! session every week for the first four years of primary school. The aim is to contribute to the development of safe and positive classroom environments where everyone is included, and to safeguard children's natural tendency to like themselves. The children work together to become a "SUPER class", where everyone is equally important. Themes such as equality, tolerance, belonging, diversity, self-regulation and self-assertion are central.

Description of the project: "SUPER!!" is linked to the values in the Core Curriculum for primary school overall section, the UN's sustainability goals and recent school research. Pupils train their social and emotional competence through play, reflection, films, wonder and stories. They explore their own and other people's feelings and reaction patterns, practice self-regulation and they learn about the power of their brain. Through wonder and creative expression, they should experience that everyone is equally important and experience a safe everyday school life. To create a good environment requires cooperation and understanding; we learn as we go, and it's easier if we go together. "SUPER!!" is built up with a structure for recognition and predictability based on the 7 colours of the rainbow. This is a basic structure and is adapted to each stage and target group with new themes, exercises, films, games, stories and reflection.

Results: Since the start in autumn 2021, 52 schools in Norway are now using the program and several more will start in the fall of 2024. These schools have annual status meetings with the program developers in MOT Norway and in this parallel session you will hear educational, thought-provoking, and moving practical experiences from the schools. Those who work with SUPER!! in the schools' experience again and again that the children are eager to learn and curious, and that through knowledge and experience they use tools that can promote mental health. As one teacher summed it up: "One thing I have learned from SUPER!! is that I have underestimated the children".

Lessons: So far SUPER!! has proven to be a powerful program for inclusion and learning. All the schools that have started want to continue using the program and have annual courses for their staff groups, as well as sending new employees on courses each year to maintain the investment in the area.

Main message: SUPER!! is used in 52 schools to promote social and emotional learning. It is based on theories and experiences in health promotion work and provides a solid methodology and structure.

4-10-P-M “VR for nursing home residents”: a practice project involving nursing students

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Issue: Nursing home residents (NHR) have few opportunities to go outdoors. Experiencing nature through virtual reality (VR) can elicit psychological benefits such as reminiscence and enhanced mood. This project has a dual purpose: i) to empower nursing students with practical skills in facilitating VR experiences for NHR, and ii) to evaluate the feasibility and acceptability of delivering VR experiences to NHR.

Description of the project: The project was initiated in August 2022 as a collaboration between the University of South-Eastern Norway, Lier’s Secondary School, and Drammen City. The VR experience consists of viewing, through a VR headset, a 10-minute 360° video reproducing a sequence of natural landscapes with matching soundscapes. The VR headsets are provided by Lier Secondary School and set up by the pupils attending the Electrical and Computer Technology line. As part of their practice training, supervised by teaching staff, third-year undergraduate nursing students plan and facilitate the VR experience among the residents of four nursing homes in Drammen, and subsequently submit a report summarizing their field observations.

Results: To date, five groups of nursing students (n=15) took part in the practice project. The initiative was generally positively evaluated by the students. In their reports, they described that operating the VR headset and facilitating the experience was mostly unproblematic, though they underlined the importance of considering the time and skills required for setting up the equipment. Despite some initial scepticism, most of the residents agreed to try the VR experience, though some refused or removed the headset shortly after the video started. During the VR experience, the residents appeared to feel a high sense of presence in the virtual world, commenting and pointing at what they were seeing and stating that they felt like they were “out in nature”. In many instances, the VR experience triggered reminiscence of places previously visited, and the residents appeared to be more relaxed or in a better mood afterwards. The VR experience also seemed to have elicited socialization, as residents tended to talk about it with each other. However, some residents disliked the experience, and some found the headset uncomfortable

or experienced cybersickness (mainly in the form of mild dizziness).

Lessons: Through this project, nursing students can improve their knowledge and skills in using VR technology as a cost-effective innovation that can improve the well-being of NHR. Facilitating the VR experience among NHR is feasible and generally well accepted, though a certain degree of knowledge and preparation are required. Moreover, scepticism and possible adverse responses among the NHR warrant careful consideration.

Main message: Experiencing nature through VR can improve the quality of life of nursing home residents. Future nurses should be empowered in the use of health-promoting technologies.

4-14-F-P Ungdata pluss: A new cohort study following children in Vestfold and Telemark

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Background: The Ungdata pluss study is a new longitudinal cohort study that will follow children in Vestfold and Telemark from when they are 10–13-year-old and into adulthood. The study is a cooperation between Vestfold and Telemark County Municipalities, KORUS sør, NOVA at OsloMet, and The University of South-Eastern Norway. The primary focus of Ungdata pluss is to investigate how children - and eventually as they become adolescents and young adults - use their leisure time, and how leisure time is associated with the development of children and young people's health and well-being, transitions related to education and work and other important outcomes in adulthood. The aim is to gain new knowledge into what can be done to ensure optimal prerequisites for well-being and societal participation for children and young adults, irrespective of their gender, place of upbringing, and socio-economic status. The first data collection was carried out in 2023 and this is a brief presentation of the study and sample characteristics.

Methods: 21 of 23 municipalities in the region agreed to participate in the study and all 5th, 6th and 7th graders from the participating municipalities were invited to participate. Approximately 50 % (N=6049) of the invited children completed a questionnaire as a first data collection in 2023 (T1). The questionnaire included established and primarily validated measurements on topics such as: leisure time (e.g. digital, physical, organized, unorganized), health and well-being (e.g. satisfaction with life, self-esteem, emotion, meaning, disability), relational aspects (family, friends, school, teachers), neighbourhood and

community (satisfaction, safety, future orientation), travel to and from activities, individual characteristics (personality). Ungdata pluss consists of survey data (five waves) and registry data.

Results: The sample from TI consists of 6049 children with an even proportion of girls (50%) and boys (50%). There is an even distribution of the different grades in our sample (5th graders - 33%, 6th graders – 34% and 7th graders 33%). 55% of the sample is from Vestfold while 45% come from Telemark. In terms of what language is primarily spoken at home, 79% of the sample speak only Norwegian, 18% Norwegian and another language, while 3% only speak a different language than Norwegian.

Conclusions: Due to its longitudinal design, Ungdata pluss has the potential to provide valuable additional knowledge to the regular Ungdata surveys, which are cross-sectional studies. Knowledge from Ungdata pluss is relevant for all working with public health, both preventive and health-promoting efforts at local, regional, and national levels.

Main message: Ungdata pluss is a new longitudinal cohort study that will provide valuable knowledge for all working with public health, both preventive and health-promotion at local, regional and national level.

4-21-P-M Music-based caregiving: Systematic relational caregiving and well-being

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Issue: The educational programme for music-based caregiving (musikkbasert miljøbehandling, <https://musikkba.sertmiljobehandling.no>) teaches healthcare staff to systematically use measures with integrated singing, music, and movement as daily care routines and activities (Myskja & Håpnes, 2016; Myrenget et al., 2024). The programme has educated more than 6 800 participants throughout Norway since 2016. The tender program is anchored in governmental strategies to recruit and retain competent healthcare personnel and enhance the quality of care. It is also mentioned in the Public Health White Paper.

Description of the project: Both practice and research indicate that applying the method may enhance communication and cooperation, leading to better flow and less uneasiness during care routines, and more satisfied recipients, relatives, and staff (Batt-Rawden et al., 2023). The focus of politicians and researchers is often on the clinical properties of musical measures and the reduction of adverse symptoms and behaviours. This paper highlights the method's relational, communicative, and well-being aspects for care recipients and staff alike.

Music-based caregiving fits seamlessly into the person-centred care model and leans on research within individualised music (e.g., Gerdner, 2005) and music-therapeutic caregiving (e.g., Götell and Hammar with collaborators). Examples show that music-based caregiving measures may contribute to meaningful activity, familiarity, sensory stimulation and regulation for the care recipients. The measures can also facilitate better relations among a group of residents and between residents and caregivers and enhance the sense of mastery for residents and care staff alike. As such, the method can also contribute to a better work environment and self-care for staff members. Healthcare staff learns music-supported ways of communicating, cooperating, and facilitating a safe and resource-oriented attitude and atmosphere, also moving beyond language. This may lead to fewer conflicts during care procedures and a higher frequency of shared meaningful activity and “golden” moments, which leads to a higher quality of life for both recipients and staff, and more satisfied relatives.

Methods: The methods of music-based caregiving fit perfectly into the campaign “ABC for good mental health”: Being active, doing something together, and doing something meaningful (Donovan et al., 2021; Jalleh et al., 2007). Meaningful music-based activities – one-to-one or in groups – are accessible beyond cognitive or other health issues and can support the mental health and well-being of care recipients, caregivers and relatives. Course participants from education and arts fields comment that the tools are also highly relevant to their work and may contribute to life management.

Main message: Music-based caregiving is a resource-oriented method supporting communication, activity, and well-being among employees, inhabitants and relatives. It may also reduce (over)medication and sick leave.

4-25-F-M Sami women's lower NEET experience in a multicultural context

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Background: The presentation's purpose is to explore and discuss how the factors of gender, class, and culture work together to form pathways from school to work among Sami women in Arctic Norway. The focus is to explore Sami women's lower NEET (Not engaged in Education, Employment or Training) experience in an ethnoreligious multi-context perspective.

Methods: The presentation consists of data derived from a cross-sectional cohort and registry follow-up study in Northern Norway, 2003–2012, and data from Statistics Norway are included for an up-to date data analysis (2021).

Results: The participants were adolescents and young people. Out of 5 877 junior high school pupils (15-16 years old) 83% answered a questionnaire in a cross-sectional study, the Norwegian Arctic Adolescent Health Study (NAAHS), whereas consent-based follow-up consisted of 68% (3987 young people). There is an ethnic self-report of 9.2% with Sami ethnicity in the respondent/consent group, hence 10% in NAAHS. The outcome variables were educational aspirations, non-completion of upper secondary school, higher education completion, and NEET experience among female Sami young adults as explained by ethno-religious affiliation. The explanatory variables are sociodemographic factors (gender, ethnicity, residency). Stratification of the participants are made by dividing girls and boys, Sami and non-Sami, Laestadian and non-Laestadian and residency by counties in Arctic Norway (previously Finnmark, Troms and Nordland). The results show that Sami women stood positively out compared to majority women and all men through the footprint to work participation. Some of the conclusions from the study are that sociocultural and macroeconomic factors must be highlighted and considered to ensure and evolve for Sami women's further work participation.

Conclusions: The access to higher education for Sami women in rural Norway has proved to be a great contributor to work and inclusion. An extensive engagement in Sami peoples' legal rights among Sami women is empowering the gender in a sociocultural perspective. All these factors can contribute to improve public health among young Sami women, although the strain on the individual can be large.

Main message: The conclusion from the study suggests that sociocultural and macroeconomic factors must be highlighted and considered to ensure, evolve and enable Sami women's further work participation.

4-30-F-3 Social support among young, queer people with immigrant backgrounds

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Background: Social support is an important health determinant among young people, as social networks and the ability to seek support improves the quality of life. This study shows that the way young, queer immigrants experience social support is influenced by intersectionality, a term that describes how their belonging to several minority groups makes them especially vulnerable to discrimination and marginalisation. The participants of this study have immigrant parents, meaning they grew up being multicultural, speaking a minority language at home and having to navigate the dominant social norms in Norway for themselves. Additionally, their families come from cultures where being transgender or queer is illegal,

the result being that they sometimes face homophobia or transphobia at home and racism in queer settings. Understanding how social support plays a role in their health and how they seek it provides valuable information when developing much needed targeted health services for queer immigrants. To examine how social support is understood and experienced by young, queer people with immigrant backgrounds in Norway.

Methods: This is a qualitative study with five individual in-depth interviews. The participants are 18-31 years old, identify themselves as queer/transgender, and have at least one parent who was born outside of Western Europe and Northern America.

Results: The preliminary results show

- Social support plays a different role in each of the participant's life, some highlighting access to health services when asked how they understood the term, while others pointed to the emotional support given by friends
- All but one of the participants sought health support due to mental health issues at some point in their lives. Three of them linked their need for health support to their experience of being queer, expressing a battle between their identity as queer and members of their parents' culture. Several of the participants received support from minority counsellors at school and emphasised the importance of confiding in someone who shared an immigrant background
- Stories of openness about their own sexuality or gender identity came to light when asked about social support and belonging, indicating that this played a vital role in what kind of support they received, and from whom. All of the participants were open about their queer identity with some family members, although four of them hid their sexuality when spending time with extended family due to their implicit expectations of a heteronormative life. One of the participants was excluded from his family after revealing his queer identity

Conclusion: There is a need for more accessible and targeted health care services that provide social support to queer immigrants.

Main message: Implications for prevention: Educating health professionals in issues faced by queer immigrants is an important preventive measure against marginalisation and discrimination.

The Social Glue: Community Participation and Leisure

3-03-F-M ABC of mental health: Is Leisure time engagement good for mental Health?

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Background: ABC of mental health: Is Leisure time engagement good for mental Health? (The Young-HUNT study). Today's young people report poorer mental health and well-being than before, that may reflect a society that has undergone major changes in recent decades. Both school and in leisure time activities are important social arenas for well-being and coping with life. Participating in activities to do something active, Belong - do something with someone and Commit - do something meaningful, is fundamental in people's life. Have leisure time activity (LTA) engagement changed among young people in recent decades, how does it change throughout adolescence and possibly how does this really affect young people?

Methods: Data from the Trøndelag health survey (HUNT), can provide a basis for a better understanding of the importance of LTA for public health initiatives. The aim of this study was to explore engagement within a wide range of LTA in a population of Norwegian adolescents, and to study possible gender and age differences in the connection between activity engagement, life satisfaction and loneliness.

Results: Using data from 25,245 adolescents (13–19 years) from the Young-HUNT study (1995–2019), the study found that participation in LTA varied over three decades. The proportion who reported low life satisfaction and loneliness increases throughout adolescence. Spectator activities, screen-based activities such as internet use, and gaming increased with sex-specific variation; a larger proportion of boys reported gaming and girls spent more time using internet and watching TV. The proportion of adolescents engaged in social meetings was unchanged over time. Leisure time activities showed lower activity engagement in 16–19 year old compared to 13–15 year olds, with exception of having contact via internet, being out with friends, and attend concerts/cinemas. Social activities like being a spectator at events, having internet contact and being out with friends were correlated with better life satisfaction and less loneliness. Activities such as gaming and internet usage were correlated with poorer life satisfaction and more loneliness. There was also a link between participation in organized sports activity and loneliness, with young people who do not participate more likely to be lonely or become lonely during adolescence than those who participate in organized sports, adjusted for possible confounding factors.

Conclusion: The knowledge from this study reinforces the need for public health strategies to help reverse the reduction in participation in LTA during adolescence. Furthermore, the study shows that LTA, especially activities that include spending time with others, are important for quality of life and less loneliness.

Main message: The importance of facilitate and implementing leisure time engagement in public health

initiatives, to increase social interaction in the community to promote mental health benefits.

5-04-F-M Not closing the gap. The social gradient in institutional trust from 2011–2019

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Background: Trust is described as the glue of healthy societies. However, levels of trust are not distributed evenly in the population, and socioeconomic status is an important determinant. Although Norway is among the countries with the highest levels of trust in public institutions, the increasing socioeconomic differences observed may threaten levels of institutional trust in the population, and more knowledge about the social gradient in levels of institutional trust over time is needed. Therefore, we aimed to investigate such differences in the general population between 2011 and 2019.

Methods: A repeated cross-sectional study was conducted using data on the general population in Østfold County from 2011 (N=16673) and 2019 (N=15935). Level of education was used as an indicator of socioeconomic status, and differences in trust toward five public institutions (healthcare system, school system, labour and welfare administration (NAV), police, and municipal council) were investigated with Chi-square tests. Logbinomial regression analyses were used to examine potential changes in high trust over time. Gender and age were included in the analyses as control variables.

Results: A relatively high proportion of the general population reported high levels of trust to the health care system (2011: 71%; 2019:80%), police (2011: 73%; 2019:77%), and the school system (2011: 64%; 2019:66%), whereas a lower proportion reported high levels of trust to NAV (2011: 37%; 2019:41%) and the municipal council (2011: 45%; 2019:36%). Both in 2011 and 2019 a clear social gradient in institutional trust was found for all institutions ($p < 0.05$). Surprisingly, there was a reversed social gradient in trust to NAV in 2011, where lower education was associated with the highest level of trust. There was a significant increase in the level of trust in the health care system (low education:RR=1,10; middle: RR=1,12; high:RR=1.06) and a significant decrease in trust in the community council (low:RR=0,77; middle: RR=0,80; high:RR=0,83) in all educational groups from 2011 to 2019. No significant changes in trust to the school system and the police were revealed. The level of trust in NAV increased significantly in the two groups with highest education, while a non-significant decrease was shown in the low educational group.

Conclusions: Although the fairly high levels of institutional trust largely remained unchanged, the social gradient persisted or even widened. This is worrying as trust is an important factor in ensuring inclusion, social capital, democracy, and health and wellbeing. The lower levels of institutional trust found in low educational groups could also be of particular concern as these groups might be more dependent on the different parts of the welfare system.

Main message: Public institutions need to focus on building trust with low socioeconomic groups. Moreover, reducing socioeconomic differences in the society is important to build trust, health, and wellbeing.

5-06-F-M Transition into retirement; active aging through the sociability of exercise?

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Background: In the face of significant growth in the elderly population within the Norwegian society, promoting increased physical activity emerges as an increasingly important tool for fostering healthier aging (Helsedirektoratet, 2022, 2023, Stenvold et al., 2020). The aim of this research project is to explore the formation of exercise habits during the transition from work life to retirement, a pivotal moment for potential changes in health lifestyles (Eklund et al., 2021, Meld. St. 15 (2022—2023), Vansweevelt et al., 2022). Health-related lifestyle research often stems from an individualistic paradigm, viewing lifestyle as a result of conscious, rational choices (Thing, 2008). This study adopts a sociological perspective, emphasizing the significant influence of social, institutional, and structural factors on our daily habits (Cockerham 2005, 2021, 2023), the study can contribute to a detailed understanding.

Methods: With a qualitative approach, the study explores the nuances of exercise context and social capital in shaping exercise habits. Two months of observations in a rural communal health club and swimming pool was combined with six in-depth qualitative interviews with women in their sixties, regularly attending the facility following their retirement. The thematic analysis combines Elias and Dunning's theoretical concept of the Spare-time Spectrum (1986) with Crossley's embodied theory of practice (2001).

Results: Newly retired women feel a strong entitlement to prioritize leisure activities of their own choice after a lifetime of duties and constraints in the time bind of work and family, when their Spare-time Spectrum significantly widens upon retirement. The welcoming atmosphere of the communal swimming pool and the organization of the training met this demand, as the activities and

context fostered a "leisure-gemeinschaft" that was a source of social capital. In addition, exercising in the pool evoked an embodied, "mimetic" sensation of wellness. These leisurely qualities were identified as crucial to the formation of their regular exercise practice.

Conclusion: The biomedical perspective often adopted in public health initiatives to increase physical activity among the elderly may inadvertently be counterproductive, as new retirees feel entitled to prioritize leisure activities over spare-time duties. Interventions aimed at active aging might enhance their effectiveness by facilitating sociability and pleasurable bodily experiences through low threshold group activities tailored to a variety of taste preferences. Venues for physical activity hold potential for contributing to increased community participation for new retirees by filling some of the void left by the loss of collegial fellowship upon retirement.

Main message: The Public Health Report emphasizes the importance of active aging, and the transition to retirement is seen as a crucial phase. The study explores factors that contribute to participation in local activity communities.

5-10-F-M Organized leisure activities and subjective well-being among children in Norway

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Background: Research indicates that participation in organized leisure activities may benefit children's well-being. However, this may depend on personal and social experiences within these arenas. According to the Self-determination theory (SDT), experiences of autonomy, mastery, and relatedness are particularly important for experiencing well-being. We aimed to investigate: 1) differences in subjective well-being between children who do and children who do not participate in organized leisure activities, and whether any association depend on participation frequency; 2) to what extent the children who participate in organized leisure activities experience autonomy, mastery, and relatedness within these arenas, and whether this depends on frequency of participation; and 3) the association between overall experiences of autonomy, mastery, and relatedness in the organized activities and subjective well-being.

Methods: We used cross-sectional survey data from the first wave of the longitudinal Ungdata pluss study, including children aged 10-13 years in Vestfold and Telemark County, Norway (n=4765-5776). Variables included were Subjective well-being, Participation in organized leisure activities, Frequency of participation, Perceived autonomy, Perceived mastery, and Perceived

relatedness related to these activities, Gender, Age, and Socio-economic status. We conducted t-tests, Anova-tests, and multivariate linear regression analyses.

Results: Reported subjective well-being was significantly higher among children who participated in organized leisure activities compared to those who did not (7.8 vs. 7.3, scale 0-10). Subjective well-being also increased with frequency of participation. The children who participated in organized leisure activities scored relatively high on five of the six variables assessing experiences of autonomy, mastery, and relatedness related to the activities (over 4.0, scale 1-5). They scored more moderate on the variable measuring perceptions of being involved in decisions about what to do in the activities (3.2, scale 1-5). For the same five out of six measures of experiences within the activities, we found a pattern of higher scores with higher participation frequency. We also found a significant positive association between overall experience of autonomy, mastery, and relatedness within organized leisure activities and subjective well-being ($b=1.1$).

Conclusions: Findings support previous research which shows that children's participation in organized leisure activities benefit upon their subjective well-being. However, findings also highlight that this association depends on the degree to which children experience autonomy, mastery, and relatedness within the leisure arenas.

Main message: The findings of this study contribute to the knowledge base for public health work targeting children's well-being, particularly within the context of organized leisure activities.

5-13-P-M Active and inclusive citizens. How can technology make a difference?

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Issue: Participation in activities and community involvement provides networks, friendships, meaning, security, a sense of belonging, and workplace skills. Many people can be resources for each other, and many want to be social and contribute, given the opportunity.

Description of the problem: In collaboration with municipalities in Norway, a digital infrastructure for activity and participation is built and developed. Some say Friskus is the coolest activity calendar in the world, others call it a platform for collaboration. In any case, it must become much easier and more efficient to help. Being able to work in a structured and systematic

manner and cooperate between departments, voluntary organizations, and residents. For residents, it must become much easier to take care of their health themselves and find relevant information about activities and social communities. We are proud to announce that 60 million NOK have been distributed to children and youth for participation in leisure activities. These funds come from sources such as businesses, voluntary organizations, politicians through local budgets, and state funding including such as BUFDIR.

Results: Over the next decades, the population's composition will change noticeably. More elderly, fewer working-age individuals, and increased exclusion challenge the current welfare model. The epidemiological challenges largely revolve around lifestyle diseases. This indicates a need in the population to make lifestyle changes, take good choices, and take care of one's health in the best possible way.

Lessons: Friskus works to help prevent the consequences of demographic and epidemiological developments from leading to "municipal collapse". Because we believe that there is much that can be done NOW to preserve our trust-based society and maintain the welfare state where everyone contributes according to their own conditions. The public sector needs an advertisement-free digital network, filled with people and opportunities. Where they can influence, motivate, and keep residents and society on the right course.

Main message: Sustainable local communities thrive when residents actively participate, inclusively contribute, and engage with their surroundings. Listen to municipal employees share knowledge and experience.

Local Environments that Promote Activity and Community

6-01-F-M A co-created digital tool for municipal planning of meeting places

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Background: The goal of developing new meeting places in local communities is that the places are being used by the residents to support active living and wellbeing. To achieve this, knowledge about different users' needs and preferences must be easily accessible in municipal planning practice. Thus, we aimed to develop a digital needs assessment tool that could be utilized by stakeholders involved in the planning of new meeting places for activities.

Methods: The needs assessment tool was developed through a consensus-based process with researchers and practitioners, which involved several steps. First, a group of experienced practitioners had a brainstorming session to identify factors that promote use of meeting places in different groups of the population based on their expert knowledge. Second, the researchers conducted a literature review. Several scientific databases were searched to locate evidence syntheses and systematic reviews on the topic, as well as recent studies not included in the identified reviews. The next steps were inspired by the Delphi method, expert knowledge and research knowledge were integrated, systematized, and grouped into factors. This process was led by the researchers, and the practitioners were involved in an iterative quality assuring process. Lastly, a survey was carried out by stakeholders that were recruited from relevant networks. The stakeholders rated the importance of each factor and could add new suggestions. The results from the survey were used to reach consensus on factors of more and less importance to promote use of meeting places.

Results: From science and practice combined, a total of 154 factors were identified. These factors were grouped into four age groups and covered the social, physical, and natural environment of the meeting place, as well as individual factors and organizational aspects. Some factors were important for use of meeting places across all age groups, such as meeting place safety, cleanliness and maintenance, lighting, toilet facilities, proximity to transport and residence. However, most of the factors (132) were age-specific needs and preferences of children (1-12 years), youth (13-24 years), adults (25-64 years) and elderly (65+ years). These factors will be incorporated into a digital needs assessment tool that can provide planners with easily accessible consensus-based knowledge about which needs and preferences that must be considered in planning practice.

Conclusion: From both scientific literature and practice a diversity of factors promoting use of meeting places were identified, most of them age-related, emphasizing the importance of planning with the intended target group in mind.

Main message: The digital tool will enhance the municipal planners' ability to plan accordingly to the needs of the intended user group, ensuring that meeting places in local communities are used.

6-03-F-M Becoming a green city: a qualitative case study of Drammen City's regeneration

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Background: Urbanization is rapidly increasing, with 85% of Europe's population predicted to be living in cities by 2050. Nature-centred urban regenerations are steadily growing as a cost-effective solution to tackle environmental as well as health challenges, thus contributing to "a future in which cities provide opportunities for all" (SDG 11). By applying a temporal lens to place-making, emphasizing the importance of everyday human experiences within an ever-evolving space, we can enhance our understanding of how nature-centred urban regeneration can support and promote health and well-being among its citizens, beyond traditional top-down urban planning or place marketing paradigms.

Methods: Through a qualitative case study, we investigated the temporal dimension of place-making in the context of Drammen City, a previously highly polluted and trafficked industrial city in South-Eastern Norway that in the past three decades underwent a large nature-centred urban regeneration. Multi-stakeholder interviews were conducted (n=21), involving three categories of residents: i) Community, ii) Municipality/policymakers, and iii) Activity, leisure and tourism. The data analysis focused on a phenomenological and social-relational perspective of place and place-making. The study is part of Drammen's activities within the NetZeroCities – Pilot Cities Programme, which received funding from the H2020 Research and Innovation Programme under grant agreement n°101036519.

Results: The analysis shows how urban place-making is temporally defined historically (past-in-the-present), experientially (present-in-the-present), and environmentally (present-in-the-future). Although the collective memory of Drammen is inherited and referred to in terms of a transition from "old Drammen" to "new Drammen", the city's history as a shared inherited memory is core to its identity. As a "River City", living in Drammen provides an opportunity to be close to, or immersed in nature even though urban nature is seen by some participants as a constrained nature experience. The participants' expectations of the future are evidenced in i) their representations of the city as environmentally focused and ii) how they engage with the surrounding environment and its affordances. Both these dimensions are linked to the citizens' sense of pride and community, as well as wellbeing and social inclusion.

Conclusions: The findings contribute to the current understanding of place-making as temporally defined, as well as how nature-centred urban regenerations support citizens' health and well-being in line with the Sustainable Development Goals. City planners should engage in a people-centred collaborative process, embracing places' temporal frame from the past, the present and the future.

Main message: Nature-centred urban regenerations support citizens' satisfaction, well-being, and social inclusion. City planners should engage in a people-centred and temporally-framed collaborative process.

6-10-F-M Geographical and survey data to inform local public policy

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Background: The Norwegian public health act dictates county councils and municipalities to keep an overview of the population health and determinants. This to inform policy making and public health initiatives. In performing this task regional and local data are particularly relevant. More specifically local planning concerned with creating health promoting environments, that for example stimulates physical activity, social engagement and sense of community belonging, may benefit from questionnaire data combined with data on spatial objects. This study aims to give knowledge useful for this purpose, combining data from a regional public health survey, registry data and geographical data.

Methods: In 2021 a public health survey was carried out in Vestfold and Telemark, Norway, including adults 18 year and older. A broad range of validated questions were included. For example, self-rated health, accessibility to facilities, social support, well-being, and lifestyle habits. 34 147 adults participated (38% response). Statistics Norway retrieved geographical coordinates for the address of the participants. Distance from the participants to health promoting objects was created as new variables. Distance variables then returned to Statistics Norway before merging questionnaire data, registry data and geographical distance variables. Descriptive results are preliminary and focus on the distance variables.

Results: Coordinates were identified for nearly all the participants (99,6%). 44 distance variables were created, containing information about for example distance to public transport and number of bus stops within a certain radius, similarly for service facilities, libraries, cultural institutions, indoor and outdoor sports facilities, green areas and pathways for walking/biking. The number of a specific facility was counted within an 800- and 3000-meter radius. Following are a few descriptive examples. 78,4% of the participants live in urban areas. The average distance to the nearest bus stop is 429 m, 81% have access to a pathway within a radius of 400 m, and the average area of green space within a radius of 800 m is 32,3%. 21,7% have access to one or two indoor sports

facilities within 800 m, and likewise 34,8% for outdoor sports facilities and 27,5% for cultural institutions.

Conclusions: The distance variables created show a variation of access among the participants. Next more complex analysis will be performed on the merged data, focusing on reported well-being and lifestyle habits in relation to perceived accessibilities, use and actual accessibility to health promoting facilities. In addition, socioeconomic background factors will be included. This is the first presentation of a rich new local data source for public health policy.

Main message: Local and regional knowledge about self-reported health and well-being combined with actual resources in the built environment may give new insight useful for public health policy and actions.

6-11-F-M Neighbourhood factors influencing people's desire to live in a certain place

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Background: National planning expectations emphasize the need for socially sustainable community development, with a focus on creating safe and inclusive places that meet residents' needs and contribute to high well-being so that people want to live there now and in the future. Numerous indicators for assessing neighbourhood factors of importance for social sustainability have been suggested. However, few studies explore the alignment between the proposed objective and subjective indicators and their predictive value for residents' desire to live in a certain place. This study compared subjective and objective indicators of access to nature, pedestrian/cycling paths, and public transportation, and examined their relationship with residents' satisfaction with the neighbourhood as a place to live.

Methods: This cross-sectional study used data from 108 738 inhabitants participating in the County Public Health Survey in Viken in 2021. Survey questions capturing perceived access to nature, public transportation, and pedestrian/cycling paths were used as subjective indicators. An outcome measure was developed from responses on neighbourhood satisfaction and the desire to continue living there. Objective indicators were computed within all postal code areas in Viken using geographical information systems and linked to the survey data. The agreement between objective and subjective indicators was evaluated using Cohen's Kappa. Linear regression was used to explore associations between the objective and subjective neighbourhood indicators, and satisfaction with the neighbourhood as a place to live.

Results: Residents in Viken perceived their access to nature, pedestrian/cycling paths, and public transportation as good. Cohen's Kappa indicated no agreement between subjective and objective access to nature and public transport, while a low level of agreement was found for pedestrian/cycle paths ($K=0.033$). We identified a positive relationship between perceived access to all neighbourhood factors and satisfaction with the neighbourhood as a place to live, now and in the future. Reporting high perceived access to nature was related to a 2.11 (96% CI = 2.03-2.19) higher satisfaction score on average compared to those reporting low access. Of the objective indicators, only access to pedestrian/cycle paths was positively related to neighbourhood satisfaction, but the estimate was weak. Objective access to nature exhibited a weak negative association with satisfaction ($B= -0.005$, 95% CI= -0.005, -0.004).

Conclusion: Limited agreement and different patterns of associations were revealed for the objective and subjective indicators. This underscores the importance of utilizing both subjective and objective indicators in social sustainability assessments.

Main message: Understanding the link between objective and subjective access to neighbourhood factors and neighbourhood satisfaction can aid in defining measures to enhance social sustainability.

6-12-F-M Green space usage nurtures self-perceived health and life satisfaction, but how?

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Background: The urban environment shapes human activity and offers avenues for promoting health. One such avenue is green space. Although green space is proposed to be a resource for health and wellbeing, there is limited insight into how usage of green space acts as a capacity builder for self-perceived health and life satisfaction among Nordic city dwellers. Thus, we examined (1) relationships between the amount of vegetation cover, perceived green space access and green space usage and (2) the extent to which potential relationships between green space usage and self-perceived health and life satisfaction were mediated through physical and social activity.

Methods: This cross-sectional study was conducted as part of the NORDGREEN project, in which Stavanger municipality was involved. We used data from a sub-sample of citizens living in urban districts of Stavanger ($n=5401$) who participated in the County Public Health

Survey in Rogaland in 2020. Information on socio-demography, perceived access to green space, frequency of green space usage, engagement in physical and social activity, self-perceived health and life satisfaction were obtained from the survey. The amount of vegetation cover within each citizen's postal code area was computed and linked to the survey data using geographical information systems. Multinomial logistic regression was applied to examine if the amount of vegetation and perceived green space access were related to green space usage. To address the second objective, mediation models were fitted, and direct and indirect estimates were computed.

Results: We found a positive relationship between the amount of vegetation and frequency of green space visits. Likewise, a positive association between perceived green space access and green space usage was observed. Compared to residents who reported poor access and seldom/never used green spaces, participants who perceived their access to green spaces as good had 4.3 (95%CI= 3.19-5.79) and 5.6 (95%CI= 4.00-7.75) times higher odds for visiting green spaces 3-5 times/week and daily, respectively. Green space usage was significantly related to both good self-perceived health and higher life satisfaction. Visiting green spaces 3-5 times/week was associated with an increase in life satisfaction score by 0.58 (95%CI= 0.42-0.75). The mediation analyses showed that these associations could be largely explained by the indirect effects of green space usage through physical and social activity.

Conclusion: Our results highlight that having access to vegetation and green space is focal to promote green space usage, which in turn seem to be a viable capacity builder for health and wellbeing through being an arena for health-promoting activities.

Main message: Urban planning should focus on ensuring access to green spaces and vegetation that offer opportunities for people to meet, socialize and be physically active in cities to support public health.

6-13-F-M Impact of mobility changes on the spread of COVID-19: A systematic Review

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Background: As the COVID-19 pandemic evolved, a growing body of literature has attempted to elucidate the relationship between human mobility patterns and the transmission of the virus. This systematic review aims to synthesize existing research findings on the influence of human mobility on the spread of COVID-19. We

explore the various methodologies employed, the diversity in scope and geography of the studies, and the implications of human movement on the epidemiological dynamics of COVID-19.

Methods: Publications reporting on associations between COVID-19 Cases or Incidence and mobility change were identified by a systematic literature search using search string (“corona or COVID-19 or COVID) and (community mobility or positioning system or mobile phone or apple mpd or cmr”) from PubMed, Science direct, Web of Science and manual reference screening, following the PRISMA reporting guidelines. First, titles and abstracts were screened by two independent reviewers followed by a review of the full articles if they met the inclusion criteria. A systematic review was performed as the studies had used wide variety of study designs and different temporal units, making it hard to summarize findings by a meta-analysis.

Results: Twenty-two studies published between 01/11/2019 to 25/12/2022 using google, cell phone location, apple mobility and john Hopkins mobility data, reveals a significant cointegration between mobility patterns and pandemic indicators in the long term. Notably, there was a relationship between grocery, parks, residential, retail, and workplaces mobility, and the number of patients and deaths due to pandemic. During lockdown, major reductions were noticed in greenspace mobility and increased residence mobility, with higher stringency indices showing more pronounced changes. Statistically, significant relations were identified between daily confirmed cases and six categories of community mobility. Effective movement restriction strategies such as curfews demonstrated reductions in new COVID-19 admissions.

Conclusion: The review underlines the complex link between mobility patterns and pandemic spread, and effectiveness of targeted restrictions. Despite certain mobility types showing no direct disease spread impact, observed mobility changes underscore nuanced lockdown effects and policy impacts. Insights offer vital input towards creating tailored, equitable interventions balancing disease control and socio-economic implications, especially for vulnerable populations.

Main message: Study underlines the complex link between mobility patterns and pandemic spread, and effectiveness of targeted restrictions.

7-01-F-M What can AI-technology tell us about the use of neighbourhood meeting places?

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Background: Many Norwegian municipalities invest resources into developing meeting places to promote activity without really knowing whether the places are being used by the residents. An important reason for this is that assessing use of meeting places is a challenging and time-consuming task for both municipal employees and researchers, especially if data is to be collected over a longer time period. Thus, we aimed to test an AI-based monitoring tool at a local meeting place to explore when and how much the place is being used and whether there are seasonal differences in usage.

Methods: A longitudinal monitoring study was conducted as part of the project Co-creating public health. In September 2023, a camera was installed at Reinsparken, a newly established pump track park and meeting place in Vinje municipality. The camera has a tiny built-in computer with an embedded AI-solution that allows us to quantify moving objects directly from a video image flow. The AI-solution reads approximately 30 images per second, and moving objects are continuously detected in each image. After detection is completed, video images are deleted every second and data is automatically transferred to Power BI that manage and analyse big data using AI-capabilities. In this way, no personally identifiable information is stored. Through Power BI, we have obtained data on monthly, daily, and hourly passings, as well as movement tracks. Up to date, we have collected and analysed data over 98 consecutive days, from 2nd October 2023 to 7th January 2024. These data were linked to daily weather data from the Norwegian Centre for Climate Services. Descriptive statistics were computed, and heat maps were used to visualize movement patterns at the meeting place.

Results: There were 804 daily passings at the meeting place over the monitoring period. The highest number of users was observed in week 46, with 2100 daily passings on average. Highest frequency of activity was observed in the month after the opening. In the December, we witnessed a substantial drop in daily passing (mean=93), compared to October (mean=1516) and November (mean=1102). To date, there has been most activity at the meeting place from Friday to Sunday, between 9 am and 1 pm. Interestingly, we observed a change in the users’ movement pattern from week 46, when the closest weather station showed that the depth of snow had reached 15 cm.

Conclusion: Through the AI-based monitoring tool, we have captured when and how much the meeting place has been used over a 98-day period. Although a longer observation period is needed to fully understand user and movement patterns, our results indicate that this is a place people visit on weekends and that season characteristics influence how the place is being used.

Main message: A monitoring system with embedded AI-technology might be a useful tool for municipalities to understand activity patterns at meeting places, which can inform future municipal planning and priorities.

Digital Lives – Opportunities and Concerns

4-33-F-M Screen Time: A Small Pixel in the Big Picture of Adolescent Mental Health?

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Background: The relationship between adolescents' digital device usage and its effects on mental health is a debated topic in research. While some studies suggest a negative correlation, others propose insignificant or no relationship. Some even argue for a positive association. Most research focuses on middle and late adolescence, leaving a gap in understanding its impact on early adolescence. Coinciding with increased digital device usage there has been an increasing number of adolescents who experience mental health issues, particularly among girls. The current study investigates the relationship between different screen time use and mental health for early adolescent girls and boys (10-13 years old). As gender is relevant both for what the adolescents use their time on digital devices, as well as mental health scores, we have a particular interest in investigating the relationship when we control for gender.

Methods: The study uses a sample from the Ungdata pluss study, comprising 5312 participants from primary school's final years (5th-7th grade), with an equal gender distribution and grade representation. We measured screen time after school for four activities (ranging from 0 to 4 hours or more): online video watching, computer/video games, mobile games, and social media. We used the Strength and Difficulties Questionnaire's emotional symptoms subscale as a mental health measure. Regular participation in organized activities was also considered.

Results: Using multiple regression, we found our model explained a significant, but small, proportion of the variance in our mental health variable (12 %). Watching videos ($B=.12$, $p<.001$), playing on a computer/video games ($B=.08$, $p<.001$) as well as being on social media ($B=.11$, $p<.001$) were all significant digital screen time predictors, but playing mobile phone games were not significant ($B=.04$, $p=.07$). However, the strongest predictor in our model was gender, where girls on average scored 1.5 higher on emotional symptoms compared to boys. Being a part of organized leisure activities on a regular basis was the next strongest predictor in our model, where participants answering no to this question on average reporting 0.45 higher on emotional symptoms.

Conclusions: Our results show that most types of screen time use after school measured in our study, were significantly associated with mental health among young adolescents, where more time was associated

with worse mental health. However, the associations were small which is in line with a lot of research on the topic. This could be interpreted as public health efforts should be directed at other factors in the life of adolescents than screen time use if one wants to promote mental health.

Main message: Based on this study efforts should be directed at gender-specific strategies, encourage organized activities, and (to a lesser degree) focusing on balanced screen time.

6-02-F-M “Pause & Refresh”: Virtual nature as a health-promoting measure for university students

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Background: University students often experience mental health challenges and high levels of stress, while at the same time tending to spend less time in contact with nature compared with older demographics. Immersive Virtual Nature (IVN) can alleviate stress, enhance psychological states, and foster feelings of nature connectedness among students, supplementing and, possibly, encouraging visits to naturalistic locations. Through a participatory development approach, this study aimed at developing and evaluating an IVN intervention to promote health and nature engagement among university students at the University of South-Eastern Norway – Campus Drammen.

Methods: The project is part of Drammen City's contributions to the NetZeroCities - Pilot Cities Programme, which received funding from the H2020 Research and Innovation Programme under grant agreement n°101036519. A mixed-methods approach with a sequential explanatory design was employed. The initial quantitative strand consisted of an experimental trial testing a IVN prototype. Fifty-four university students experienced a 3-minute IVN reproducing a naturalistic location near the university campus, either in a winter or a summer version. Perceived stress, affect state, nature connectedness, and intention to visit the location were assessed before and after the IVN experience. Additionally, the students were contacted one week later to report whether they visited the location. The subsequent qualitative strand included two focus groups with students ($n=5$) and other experts (a therapist and a student adviser) to explore their perceptions regarding the IVN and discuss suggestions on how it might be improved and delivered. The preliminary findings were

presented and discussed during a workshop with two representatives of the Students' Welfare Organizations for further insights.

Results: The integrated findings indicated that the IVN elicited short-term psychological benefits including reduced stress, improved affect state, and increased levels of nature connectedness. The potential of IVN of encouraging visitation of local nature was less clear. Further, the focus group and workshop provided insights on how to best refine and implement the IVN intervention, including details about the logistics and content of the IVN experience. The final IVN intervention resulted from the participatory process will be launched and made available to students in Campus Drammen during the fall semester 2024.

Conclusions: This project contributes to understanding the potential of IVN as a means of health promotion and environmental awareness among university students, emphasizing the value of adopting collaborative and participatory designs in the development of interventions targeting this vulnerable social group.

Main message: IVN can contribute to alleviating stress and increase engagement with nature among university students. Collaborative and participatory approaches can enhance the impact and IVN interventions.

7-02-F-M Consequences of screen use among children and adolescents

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Background: Children and adolescents use screens and other digital media daily, across most arenas. Screen use can have both positive and negative consequences on physical health and development, but research has thus far been unable to draw firm conclusions. The Screen Use Committee commissioned the Norwegian Institute of Public Health to summarize the consequences of screen use in children and adolescents (0-19 years).

Methods: We conducted two umbrella reviews. Umbrella Review 1 on consequences of screen use on physical health measured as musculoskeletal pain (back, neck, and shoulders), headaches, and eye health. Umbrella Review 2 on consequences of screen use on emotional, cognitive, and motor development. We conducted a systematic literature search (December 2023) in seven electronic databases. Two reviewers independently included and excluded systematic reviews, in accordance with pre-defined inclusion and exclusion criteria. We used machine learning features in the EPPI Reviewer tool for screening and we used AMSTAR 2 to assess the reviews'

risk of bias. The newest systematic reviews with the lowest risk of bias addressing each outcome measure will be summarized. Clinical experts in the relevant fields assist us in the process.

Preliminary Results: The search identified 4048 unique references. Of these, 179 references underwent full-text screening (physical health: 29, development: 162). Twelve references addressed outcomes relevant to both umbrella reviews. For Review 1 (physical health), we included 13 systematic reviews on physical health, four on musculoskeletal pain and nine on eye health but none about headache. For Review 2 (development), we included 28 systematic reviews, 19 on emotional development, 16 on cognitive development, and three on motor development.

Conclusion: The results from these two umbrella reviews will be published during spring 2024 and used by the Screen Use Committee in their writing of an Official Norwegian Report (NOU) on screen use among children and adolescents in Norway.

Main message: Screen use can have both positive and negative consequences on physical health and development in children and adolescents. We conduct and will present results of two new umbrella reviews.

7-03-F-M Image sharing online - a public health problem?

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Background: Adolescents sharing nude images online is frequently problematized through association with various coercive practices, financial transactions, sexual harassment or assault. Studies have shown that sexual images may also be used as part of a regime of coercive control in romantic relationships. At the same time, the sharing of nude images is increasingly normalized between consenting young adults. This study investigates the sharing of nude images among young people in Vestfold and Telemark following the introduction of the question in the UngData surveys in 2018.

Methods: The study is based on results from Ungdata surveys in 2018 (N=1,576), 2021 (N=4,262) and 2024 (N=approx. 20,000). The analysis presents results from Vestfold and Telemark in 2024, and a time series analysis for certain municipalities. We explore associations between sharing nude images and adolescents' health and wellbeing.

Results: Between 13 and 15 percent of pupils in secondary schools in Skien reported sending nude images of themselves to others in 2018. When Larvik, Kragerø, and Tønsberg included the relevant questions in the survey

three years later, the proportion of young people sending nude images of themselves to others was more or less unchanged. In 2024, the relevant questions will be included for all municipalities in Telemark and Vestfold. In 2021, the proportion of young people sending nude images of themselves to others increased with age and was significantly higher among girls. Pupils who shared nude images with others reported lower quality of life, poorer health, and more frequent experiences of sexual harassment than others. The gender differences were apparent in terms of experiences as well as assessments. Since 2021, the increasing influence of the digital sphere on young people's everyday lives has accelerated. Results will focus on data collected in the spring of 2024 to shed light on the development of this phenomenon.

Conclusion: Results will focus on associations between nude image sharing and various health outcomes to explore implications for health promotion policy, research and practice.

Main message: The prevalence and predictors of sharing nude imagery and the implications for young people's health and wellbeing are critical to primary prevention and risk amelioration.

7-06-F-M Online Health Information Seeking Behaviour Among Young Adults: A scoping review

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Background: The availability of accurate health information and the ability to navigate online sources play a crucial role in empowering individuals to make informed decisions about their physical and mental well-being. With the integration of the internet, portable technology, and social media, young adults (≥ 18) have increasingly relied on digital platforms for accessing health-related information. However, there is still a need for a systematic overview explicitly investigating young adults' online health information-seeking behavior (OHISB). This scoping review aims to understand young adults' OHISB and answer three research questions: 1) Identifying studies on young adults' online health information-seeking behavior, 2) Determining which digital platforms young adults tend to search for health information, 3) Identifying characteristics in the user interface that apply to young adults' aims and trust. Protocol: 10.1136/bmjopen-2023-074894.

Methods: An initial literature search, followed by a comprehensive search, was performed in December 2023 in the following databases: Embase, Web of Science, and SCOPUS. The final search identified 4634 publications,

resulting in 912 publications obtained for screening, after removing duplicates. 54 articles met the inclusion criteria. To identify common themes related to the research question, qualitative content analysis was performed.

Results: The results from previous studies indicate that young adults use two main types of online approaches: search engines and social media. Hereby, they retrieve health information from five types of internet-based sources. Moreover, the results reveal six categories of impact factors identifying characteristics in user interface and platform design having an impact on younger adults searching for health information. Based on young adults expressed needs, the categories are proposed as six characteristics: 1) credible content from trusted professionals, 2) usability and user-friendly design, 3) tailored language, 4) web 2.0., 5) privacy, and 6) inclusivity.

Conclusion: The review reveals that young adults' OHISB is not sufficiently investigated. Being a field in progress in a changing digital environment, the vast majority of the publications have become rapidly outdated. The findings suggest that more studies are needed to understand young adults' OHISB to better support health-promoting decisions. Based on the results, the review proposes multiple objectives for future studies, including elaboration on young adults' OHISB and the AI context, facilitating younger adults' health literacy regarding health information, and more investigation on the OHISB of young adults in vulnerable positions and their expressed needs.

Main message: Young adults crave trustworthy, accessible health info online, but research gaps hinder public health efforts to empower healthy choices in a digital world.

Safety at Home and in the Community

8-04-F-P Women's experiences living with a family member's substance misuse

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Background: Research has shown that substance misuse may have significant consequences for the mental and physical health and wellbeing of other family members. Women are affected by this more frequently than men. These negative consequences persist over time and vary by relationship status.

Aim: To explore how women experience and are affected by substance misuse in the family.

Method: A metaphorical analysis of narrative interviews with 11 daughters and 5 wives of older adults (>65 years) affected by substance misuse.

Results: We identified four primary themes pertaining to women's: 1. experiences (chaos and crash and walking on eggshells); 2. coping strategies (complicity and silencing); 3. dilemmas (deceit or disease and 'open' or 'closed' dilemmas); and 4. consequences (identity, health and varying kinds of help).

Conclusion: Living with a parent or partner's substance misuse use was represented as chaotic,

unsafe, uncertain, with women experiencing limited hope and scope for change. This study shows how metaphors may be used to mediate traumatic experiences rooted in negative emotions and represent important 'tools' for communicating experiences that may be difficult to address due to the associated shame and stigma.

Main message: Substance misuse affects both the individual concerned and family functioning with family members both in need of adequate support and critical in recovery-oriented care.