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Editorial

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Almost all of us within the European Health Psychology Society will have heard of United Nations' Sustainable Development Goals (SDGs), although it is likely that far fewer of us could confidently list all of them. This special issue is a showcase of the work our colleagues around the world do to contribute to sustainable development, and a call for stronger alignment, and perhaps mindfulness of SDGs in health psychology research, teaching, and practice.

This issue has been in the making for some time. The idea was a result of many discussions about how health psychologists can recognise and incorporate SDGs in their work within the Special Interest Group at the EHPS "Equity, Global Health, and Sustainability", and the EHPS committee at the United Nations. The articles in this special issue build on these conversations, and they highlight that:

1) There is a need for embedding awareness of SDGs and whole systems thinking into school curricula;

2) The health psychology discipline needs to revise and innovate its approaches to research, to better reflect the interconnectedness of SDGs and the bi-directional relationship between health and the environment;

3) The EHP Society can serve as a voice of health psychologists in international forums, and as a platform facilitating integration of SDGs into our work.

Paquito Bernard and Guillaume Chevance open this special issue with their invitation to think about how health psychologists can contribute to climate change mitigation and adaptation through their research and teaching. They highlight some of the methodological challenges and opportunities in health psychology research, addressing those which they suggest could accelerate whole system thinking. In addition to these, Paquito and Guillaume suggest that lack of training and educational materials are barriers to the development of climate change-related initiatives within the health psychology profession.

To show how the whole system's thinking and SDGs can be woven into university curricula, Mala Matacin shares her experience of developing seminars for first year university students at the University of Hartford, encouraging them to use SDGs as a thinking framework in a collaborative assignment.

The contributions by Paquito, Guillaume, and Mala provide ideas and links to resources that can be used or further developed. The Special Interest Group "Equity, Global Health, and Sustainability" now also has a dedicated task force for development of such educational materials, and you are welcome to join the group by signing up to the mailing list.

Following on, Lisa Warner and colleagues illustrate the interrelatedness of SDGs and human health on an example of tap water drinking, together with the different approaches to its promotion adopted in Estonia, Germany, Iceland, and the United Kingdom.

The last contributions by Josianne Kollmann, Philipp Kadel, and a team of colleagues led by Lisa Warner represent activities of the EHPS externally and internally.

Josianne and Philipp lay out the One Health

approach and share their view on the role of health psychology in promoting this approach based on their experiences of attending the World Health Summit and the Psychology Coalition meetings at the United Nations, representing the EHPS.

Lisa and colleagues then conclude this issue with results of a survey evaluating EHPS members' views of initiatives aiming to reduce carbon footprint of EHPS conferences adopted in 2022, including suggestions for potential improvements at future conferences.

I hope that this special issue highlights some of the opportunities, and perhaps also the responsibilities, of the health psychology discipline in actively contributing to sustainable development in our work.

On behalf of the editorial team, I would like to thank all authors for their contributions, and I hope that you enjoy reading this issue.

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Position Paper

Health psychology and climate change: a race against time

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Our daily work, research centers and Universities, our patients, our models or 'outcomes', are or will sooner or later be impacted by climate change with a possible paradigm shift coming for health systems in the next years (Hensher & Zywert, 2020; Rickards & Watson, 2020). This opinion piece is an invitation to think about how we, as a field, can all contribute to climate change mitigation and adaptation via our research, teaching activity or personal and collective actions.

The number of climate change related initiatives in health psychology is modest or low. This can be explained by several barriers: lack of training (for students, stakeholders and academics) on climate change-related questions and a lack of educational resources bridging climate change and health psychology (Leal Filho et al., 2021); maybe a misunderstanding of the scale of the issues posed by climate change and the urgency of the situation; fear, or shyness, to investigate a topic not traditionally studied in our academic field (particularly for recognized researchers); or lack of funding in health or social sciences to research climate change issues (e.g., only 0.12% of research funding for climate change mitigation is dedicated to social sciences; Overland & Sovacool, 2020). Consequently, there is lack of studies investigating climate change together with psychological and behavioral variables. A recent bibliometric analysis of the literature linking health and climate change highlighted that health behaviours were almost missing among investigated health outcomes. Second, most of the published studies focused on climate impacts (which are mostly observational studies), and mitigation/adaptation actions (mostly interventional studies) were understudied (Berrang-Ford et al., 2021). More research is needed to link climate change with traditional outcomes from the field of health psychology and mostly interventional efforts helping peoples to mitigate or adapt to climate change through psychological and/or behavioural interventions (Sheeran et al., 2017).

In the last year, we published two reviews on health behaviours and climate change that can help identify the challenges and opportunities for health psychology (Bernard et al., 2021; Chevance et al., 2022). We examined the bidirectional associations between health behaviours with air pollution, heat waves, natural disasters, and greenhouse gases emissions. Figure 1 illustrates our findings for physical activity.

We have learned several lessons from this work:

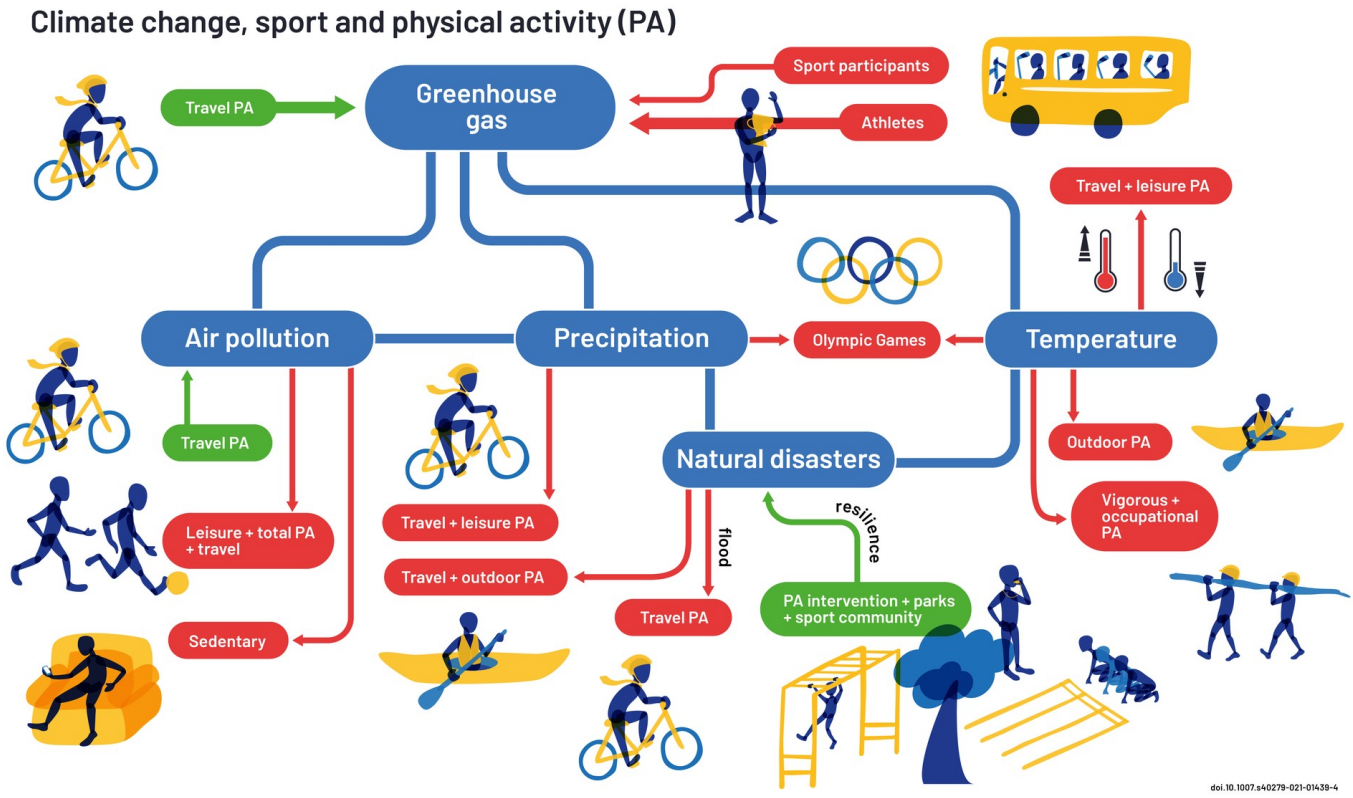
(i) there are bi-directional associations between most health behaviours and most climate change outcomes, in the sense that both are influencing each other;

(ii) health behaviours can have a concurrent adaptation, mitigation or amplification role towards climate change and it is crucial to stop promoting health behaviours that can have a negative impact on climate-related outcomes;

(iii) climate change increases inequity in terms of behaviour change on, at least, four levels: within countries, between countries, at the inter-generational level and between genders; and specific actions at each level are needed;

(iv) health behaviours are the perfect outcomes to understand that the question of individual

Figure 1. Framework of associations between climate change and physical activity- related behaviours (Bernard et al. 2021)



Notes. Green = positive association between climate change variables and physical activity domains; Red = negative association between climate change variables and physical activity domains; Illustrator is Tamara Martel.

behaviour change versus systems change is a false dichotomy (Sniehotta et al., 2017), instead individuals' behaviour change and large scale/ political actions as interdependent and mutually influencing each other;

(iv) climate change is a race against time for health psychologists and actions are strongly needed beyond observational studies;

(v) we have to overcome a paradoxical requirement for our health systems, i.e., to reduce its carbon footprint (e.g., 6% of United-Kingdom total carbon footprint) while improving its resilience and evidence-based cares.

Below we provide examples of actions for practitioners, students, and academics from the field of health psychology to start dedicating time to climate change.

Foster social and individual changes. Our community has the skills to contribute and accelerate projects accounting simultaneously for health and environmental outcomes (Eichinger,

2019). Unprecedent behavioural transformations are needed to mitigate climate change and the scale of the issue is huge: the average individual carbon footprint of a European is around 7 tonnes of CO2 per year; if we want to reach the Paris Agreement, individuals' carbon footprint should stay below 2 tonnes of CO2 per person and per year, which concretely means that we need to radically rethink our lifestyles. Mitigation strategies may be perceived as personal sacrifices or a loss of quality of life but reaching a "1.5°C lifestyle" can also be an opportunity to promote win-win planetary health strategies for all (Inauen et al., 2021). For instance, free public transport, 4-day working week and free school meals can be a good set of examples. The development or transformation of fare free public transport is associated with car frequency decrease (Kebłowski, 2020). Furthermore, public transport development has been associated with higher level of light to moderate physical activity (~35 minutes). A UK report highlighted that 4-day working week without loss of pay may be associated with a lower carbon footprint and better well-being in families (Mompelat, 2021). Free plant-based diet school meals could be associated with (in)direct benefits for diet quality, weight management and family well-being (Cohen et al., 2021). A lot of initiatives are already underway and would greatly benefit from health psychologists' skills in their optimization.

Teach & popularise. In our paper examining climate change from the lens of health psychology, we called to include planetary health and climate change model in our courses (Bernard, 2019). The European Health Psychology Society could be the perfect platform to collectively develop online courses that speak to health psychology students. We provide here for this purpose a set of different type of documents (Podcasts, conferences, blog, and academic articles) about climate change, health, and health psychology (https://osf.io/39nvh).

Develop scalable interventions. There is little time left and as advocated elsewhere we need more interventional efforts over observational studies (Sheeran et al., 2017). Replicating previous successful interventions combined with the development of new agile N-of-1 trials could provide us a solid base to efficiently develop and test evidence-based interventions promoting health and sustainability. N-of-1 studies have a lower financial cost, are more flexible in terms of content, personalization, and mode of delivery that randomized controlled trials. These interventions could target individuals but also communities (e.g., collective self-efficacy). Additionally, we believe that relatively simple mode of delivery should be prioritized (face to face, email, SMS) for accelerating their implementation and scalability while not contributing further to the digital divide.

Conclusion. The COVID-19 pandemic shows that our scientific community can quickly generate huge amounts of new practical knowledge in record time on topics that are only partially familiar to us. As argue elsewhere, imagine what could be achieved in one year if, similar to COVID-19, our scientific community shifted to focus on climate mitigation and adaptation (Tonne, 2021). It is important to keep in mind that the COVID-19 episode was only a transitory crisis, while climate change is a long-term game changer for our societies and that actions taken to date to mitigate climate change are insufficient: carbon dioxide emissions continue to rise by about 1% per year worldwide and the 1.5°C global temperature threshold is expected to be exceeded by 2040 under most scenarios. We, as a community, have little time left to meaningfully contribute to climate change mitigation. We content that climate change is among the most urgent issues facing all scientists and should become a central priority for the health psychology community.

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Original Article

Using the United Nations Sustainable Development Goals as a Pedagogical Tool to Address Global Health Inequalities

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Abstract

The phrase, "think globally, act locally", advocates for individuals to act in their immediate environment in an effort to address larger worldwide health concerns. Educating university students as global citizens requires faculty to engage them in meaningful course content and the United Nations (UN) Sustainable Development Goals (SDGs) can be one such avenue. As pedagogy, SDG 4 (quality education) encourages action-oriented learning environments. As course content, the scope and integrated nature of the 17 SDGs offers instructors flexibility in creating assignments that address the planet's most urgent economic, social, and environmental crises. I introduce two projects (Global Changemakers and #JoinTogether UHart) that ask first-year students to critically think about global health issues, particularly women's health, while advocating at a local level. I also share my experience with using a student preceptor who helped facilitate the class. Students had high enthusiasm for the subject, reported being provided with useful information and skills, and some sought out academic and non-academic opportunities related to course after it ended. These outcomes indicate that the SDGs may be an effective pedagogical tool to engage future interest in gender, health, and other systemic inequities thereby moving the UN's SDG agenda forward.

Keywords: United Nations, Sustainable Development Goals, SDG, women's health, health inequities, pedagogy, advocacy, gender equality, teaching, preceptor, #JoinTogether

Using the United Nations Sustainable Development Goals as a Pedagogical Tool to Address Global Health Inequalities

In 2015, the United Nations Member States adopted 17 integrated Sustainable Development Goals (SDGs) meant to address global economic, social, and environmental sustainable development. They hoped these goals would be achieved by 2030 (UN, 2015). However, action to meet the goals were slow; the associated 169 targets and 232 indicators of the SDGs can be tracked online (Ritchie et al., 2018). In September, 2019 the UN Secretary-General, António Guterres, summoned for a "decade of action" calling on three segments of society to move the SDGs forward —global action, local action, and people action. In regard to people action, Guterres stated "I am calling on civil society, grassroot organizations, media, private sector, unions, *academia* [emphasis added] and others to mobilize partnerships like never before" (Guterres, 2019).

It is vital for educators to engage students in knowledge of and avenues *by which* the SDGs move forward. The United Nation's Educational, Scientific and Cultural Organization (UNESCO) leads the efforts for quality education (SDG 4) and calls for innovative pedagogy. Transformative education is

interdisciplinary, requires learner-centered approaches, collaborative decision-making, critical and systemic thinking, problem-solving, and is action-oriented (Leicht et al., 2018). Quality education (SDG 4) demands that instructors engage students in understanding inequities from a systemic perspective rather than simply teaching them to be "personally responsible citizens" (Westheimer, 2020).

One way that civil society, including academia, can be involved with the UN is through the Department of Global Communications (DGC) (formerly the Department of Public Information; DPI). As a newly appointed UN representative for the Association for Women in Psychology (AWP), I attended the 67th UN/DPI conference, "We the Peoples: Together Finding Global Solutions for Global Problems", in August, 2018. I met a team from De Montfort University (DMU) who presented their work on the creation and execution of #JoinTogether, a network of universities using the SDGs to educate and address inequalities. DMU's Vice-Chancellor "challenged universities to be less talk and more action" (UN/DPI and NGO/DPI Executive Committee, 2018, p. 50). Inspired, I joined this network and created #JoinTogether UHart, a project on women's health.

The phrase, "think globally, act locally", advocates for individuals to act in their immediate environment in an effort to address larger global health concerns. Addressing structural change is not easy but acting on problems in their own lives can be a step toward empowering students toward this larger goal. As stated by Leite (2021), "it is our students who will determine the post-2030 global agenda – so why not bring them into the debate now?" (p. 7). Guided by SDG 4 (quality education), I wanted to create a learner-centered environment, in my first-year seminar that focused on women's bodies ("Beauty, Body Image, and Feminism") where students were involved as active co-collaborators rather than passive listeners. SDG 5 (gender equality) was the predominant focus of the course, as Horton (2015) suggests it is often overlooked by those seeking to address SDG 3 (good health and well-being). Using the SDGs as a framework, I designed two projects (Global Changemakers and #JoinTogether UHart) for my students to address global women's health issues while advocating locally.

First-Year Seminars (FYS)

First-year seminars (FYS) are low-enrollment, introductory level, seminars designed to help students become comfortable with academic culture and often include how to improve writing, analytic, and speaking skills (Mamrick, 2005). At my institution, FYS instructors are also asked to identify a real-world problem and create a collaborative project to address it. Addressing a problem implies advocacy but is not generally a goal of FYS courses. However, SDG 4 (quality education) calls for action-oriented efforts and is well-suited to engage students in a dynamic way.

My FYS focused on the ways in which women's bodies are socially constructed and viewed; we paid particular attention to patriarchy as a social structure that shapes these constructions and feminist theories that help deconstruct them. We also examined consequences on an individual (e.g., body image dissatisfaction, health) and structural level (e.g., gender-based violence, sex trafficking). The college offers approximately 25 different FYS from which incoming students can choose. My FYS primarily draws women who are Psychology, Biology, and Communication majors; 16 women enrolled in the section.

FYS courses often utilize a student preceptor (similar to a teaching assistant). Preceptors are commonly found in nursing environments where experienced nurses (preceptors) are paired with novice nurses to help with critical thinking, clinical decision-making, and the transference of knowledge and skills in a clinical setting

(Freiburger, 2002). Student preceptors are advanced, academically successful undergraduates, chosen by the instructor, who use their skills to both model successful academic behaviors (e.g., how to engage in seminar discussions) and guide students who might need additional help (e.g., serve as a writing coach). Being a preceptor provides talented students a unique leadership opportunity in working closely with a faculty member in teaching and mentoring. It has been shown that FYS courses utilizing preceptors had greater student engagement than those without one (Black & Voelker, 2008). My preceptor had taken the same FYS the year prior and was familiar with my teaching style; however, the SDG-related content was new. Given the all-female makeup of the class, it is worth noting that the preceptor was male. Since systemic issues of power were part of the course, we acknowledged the ways this gender dynamic might shape the class process (e.g., female students might not want to share certain personal stories). We also noted that using his male privilege to advocate for gender and other inequities was a significant message. He attended each class, was available to help students improve their writing, modeled how to connect personal anecdotes to course content, how to ask good questions, and co-lead a discussion. We had weekly meetings to debrief his role as a preceptor, navigate student concerns, and organize the SDG-related course content.

SDG-Related Course Content

Global Changemakers

I created the Global Changemaker assignment to bring awareness to women's roles as global advocates, familiarize students with the SDGs, and encourage critical thinking regarding the intersections between the goals. The students and preceptor randomly chose one of 16 SDGs to study which became their SDG for the semester; SDG 5 (gender equality) was purposefully left out. This weekly assignment entailed an oral presentation regarding a woman previously unknown to them, outside the United States, whose work addressed their SDG. They were also required to provide thoughts on how their SDG intersected with gender equality (SDG 5), as it was the course's main focus. The preceptor presented first providing a model for students to follow. To encourage critical and systemic thinking, the preceptor and I facilitated discussion that modeled intellectual curiosity by asking questions that placed the issues in their larger social, political, or economic context. Over time, students' presentations and comments became more sophisticated in placing responsibility for change within systems rather than individuals.

#JoinTogether UHart

The collaborative class project was part of the larger #JoinTogether UN network (https://unisjointogether.com/) providing students with a sense of ownership in being connected to global partners. Students were asked to think about an issue facing the planet related to their SDG ("think globally") that we could address on campus ("act locally"); that issue had to be tied to gender equality (SDG 5). They listened to each other's ideas, viewpoints, and collectively decided on two issues related to women's health—sexual assault/violence and the availability of sanitary products. The preceptor and I acted as facilitators so as not to interject our own ideas regarding pressing issues that were important to the students. #JoinTogether UHart had three goals: distribute and analyze a survey on the two issues; create an awareness campaign; and fundraise for organizations addressing sexual violence and menstrual products for those in need.

How would we meet these goals? With guidance from the preceptor and me, the class created five teams: 1) research/education; 2) fundraising; 3) artistic; 4) community connections; and 5) social media. The research/education team problem-solved best ways to address the two issues on campus and how they would educate the community about the SDGs and #JoinTogether UHart. The fundraising team researched relevant organizations and raised $400 for two of them. The artistic team created educational materials for presentation that were guided by the 7 digital trends outlined by the UN in their creations (Erdoğan, 2018). The community connections team identified on and off-campus organizations for potential partnerships. The social media team used Twitter (@jointogetheruoh) and Instagram (jointogetheruhart) to highlight the project and share relevant content. Students had to rely on the other teams' work thereby becoming accountable to each other rather than solely to me as the instructor. For example, the research team had to create, distribute, and analyze the survey before the artistic team could create educational and presentation materials. At the beginning of each class, students provided updates about their team's progress providing an opportunity for feedback and problem-solving together. These check-ins showed the class we took their work seriously and was important beyond a grade. We built a classroom that was enthusiastic, collaborative, and engaged.

At the end of the semester, all FYS classes presented their projects at a college symposium, similar to a scientific poster session. My class shared their survey results, continued to fundraise, and educated the audience about the SDGs with an interactive activity. People could choose one of the SDGs that they most wanted to support. The social media team took their picture holding the appropriate SDG square logo and these were projected onto the wall behind our table so everyone in the room saw them in real time. #JoinTogether UHart received the "audience favorite" award. It is not surprising that, on a Likert scale from 1 ("strongly disagree") to 5 ("strongly agree"), student evaluations showed tremendous enthusiasm for the subject (4.9) and being provided with useful information and skills (4.8).

Discussion

As a global call to action, the SDGs can be a useful framework to educate current students who will be future healthcare advocates, policy makers, and leaders. Educators can use the SDGs to teach how inseparable the planet's most urgent issues are. Assignments that require critically thinking about the intersections between the SDGs (e.g., Global Changemakers), requires students to make their own connections that are not always explicitly stated in the targets. Although I requested that students examine the relationship between their SDG and gender equality (SDG 5) to highlight the visibility of women's efforts in global change, instructors could alter this assignment to fit course content. Faculty teaching Health Psychology, for example, could focus on good health and well-being (SDG 3) and require that students investigate how it intersects with poverty (SDG 1), reducing inequalities (SDG 10), or any other issue pertinent to the course or region. Because the SDGs encompass so many issues, it allows for flexibility and creative class assignments.

#JoinTogether UHart required active participation, treated students as co-creators rather than passive recipients, and provided both academic and advocacy skills. Students were encouraged to share their viewpoints and question project decisions. With time, they felt more empowered to engage with each other without relying on the preceptor and me. My students were invested and genuinely felt that they contributed to the larger good. In fact, several students were disappointed when the course ended and sought

out other opportunities (academic and non-academic) where they could continue to advocate for gender equity and women's health. Being part of a larger, global effort provides meaning to students who may not initially see the connection between course work and its significance in the world. Instructors could seek out larger SDG efforts and resources, some of which I introduce below, and adapt them for their classrooms in an effort to interest students in issues of health equity. We could be educating future healthcare advocates.

It is highly unlikely, however, that one college class can create global citizens. But if universities focused on courses and programs with a commitment to equity and inclusion rather than measuring success by graduation rates and similar indices (Allias et al., 2020), then maybe UNESCO is correct and quality education is what is needed to achieve all 17 SDGs.

Instructors are key to meeting the targets of quality education, but in disadvantaged parts of the world, there are teacher shortages, lack of professional training, and scarce resources (UNESCO, 2017). Perhaps the way we think of "teachers" can be expanded. Student preceptors may be a novel way to support SDG 4 (quality education). Just as nurse preceptors help novice colleagues in healthcare settings, student preceptors can mentor junior peers in a classroom which has been shown to have a positive effect on students (Black & Voelker, 2008). My preceptor was an international student who helped us all "think globally" which was invaluable to the SDG-related projects. His academic abilities were equally matched by a vivacious, genuine concern for the class; I am certain his support contributed to the high scores on enthusiasm and skill development. I find learner-centered classrooms to be much more time-consuming than "traditional" (lecture and exams) courses and preceptors can help by addressing students' concerns outside of class. In fact, some students are more comfortable asking the preceptor, rather than the instructor, for help. But, there is negligible research on the efficacy of student preceptors and more evidence is needed to suggest how and where their efforts would be best utilized.

Being part of a larger professional organization, academic field, or initiative tied to the UN can provide opportunities for educators to form partnerships and share pedagogical practices. Currently, the #JoinTogether network is dormant and DMU is focusing its attention on SDG 16 (peace, justice and strong institutions; M. Charlton, personal communication, March 11, 2021). In the field of psychology, "Psychology Day at the United Nations" has offered an opportunity to discuss psychology's role in addressing global concerns since 2007 (PCUN, 2021). The European Health Psychology Society (EHPS) has had a formal relationship with the UN since 2011 (EHPS, n.d.). In 1979, The Association for Women in Psychology (AWP) joined the UN during the "United Nations Decade for Women" making it one of the oldest feminist organizations to be affiliated (Tiefer, 1991).

SDG teaching resources are plentiful. The United Nations Academic Impact (UNAI) is an initiative that brings together research and educational institutions which share a commitment to ten basic principles (UN, n.d.-b). Both UNICEF (World's Largest Lesson, n.d.) and UNESCO (n.d.). are excellent sources of information. The UN also provides a link to download the SDG icons and posters (UN, n.d.-c) which students and I used for class and the symposium. There are other independent, global efforts that provide teaching resources, databases, curricula, charts, presentations, and various projects: #TeachSDGs (Teach SDGs, n.d.), 17Goals (17Goals, n.d.), and Our World in Data (n.d.).

My seminar ended prior to COVID-19, but it is important to acknowledge the ways in which the global pandemic has intensified inequities. Women have disproportionately been impacted by economic, health, unpaid care work, and gender-

based violence (UN, 2020a). Education systems have been hit hard and suddenly—schools have closed but remote learning has deepened the digital divide disproportionately affecting students in some of the poorest countries (UN, 2020b). These impacts highlight the need to address some of the criticisms of the SDGs particularly in relation to the interpretation of good health and well-being (Eckermann, 2016), gender equality (Razavi, 2019), contradictory relationship to growth (Hickel, 2015) and protection of women's human rights (Sen, 2019). The limited progress in meeting the 2030 agenda may even be reversed (UN, 2020b). Recently, the UN Secretary-General stated that "while every country has the right – and the duty – to protect its own people, no country can afford to neglect the rest of the world" (Guterres, 2021). For instructors in privileged circumstances, we have the responsibility to act with responsive pedagogies that include, not ignore, catastrophic global health crises like the coronavirus pandemic. I urge us to be the global citizens he calls for and the kind of students we hope to graduate.

Author Note

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Original Article

Drinking Water from the Tap for Individual and Planetary Health: A Call for Action for Behavioural and Public Health Scientists

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Drinking-water is a human right and it should be available, accessible, affordable, acceptable and safe for all at all times (United Nations General Assembly, 2010). Tap water is widely accessible in many countries in the WHO European Region and the European Union, and it can be a healthy, cheap, and climate-friendly option for hydration. Despite the availability of tap water, the intake of packaged water and sugar-sweetened beverages remains high in Europe (Malik & Hu, 2022; Tosun et al., 2020). Surveys conducted in the European Union showed that between 2012 and 2015 59% of the respondents used tap water for drinking at least occasionally (ECORYS, 2015), and 49% reported this to be their usual choice for drinking (TNS Political & Social, 2012). However, tap water use varies greatly across countries. While in some of the countries in the north of the WHO European Region (e.g., Estonia, The Netherlands, Sweden, Finland) tap water consumption was reported as very high, many countries remain where consumption is reported to be rather low (e.g., Bulgaria, Cyprus, Ireland, Latvia, and Malta).

In the context of the current climatic crisis, in which a significant human influence has been established (IPCC report, Masson et al., 2021), the high consumption of packaged beverages is of concern due to its high ecological footprint. Moreover, a high intake of sugar-sweetened beverages is of concern due to its proven association with weight gain and obesity, among others. Therefore, the promotion of tap water consumption lies directly at the interface of a number of UN Sustainable Development Goals: Good Health and Wellbeing, Clean Water and Sanitation, Cleaner Production and Consumption, and Climate Change, while being of relevance also for targets related to quality education and reduced inequalities. In the pan-European Region, the UNECE/WHO Europe Protocol on Water and Health (United Nations Economic Commission for Europe, 1992) – an international legal agreement linking sustainable water management and the prevention, control and reduction of water-related diseases – stipulates that "equitable access to water, adequate in terms both of quantity and quality, should be

[1]The author affiliated with the World Health Organization (WHO) is alone responsible for the views expressed in this publication and they do not necessarily represent the decisions or policies of the WHO.

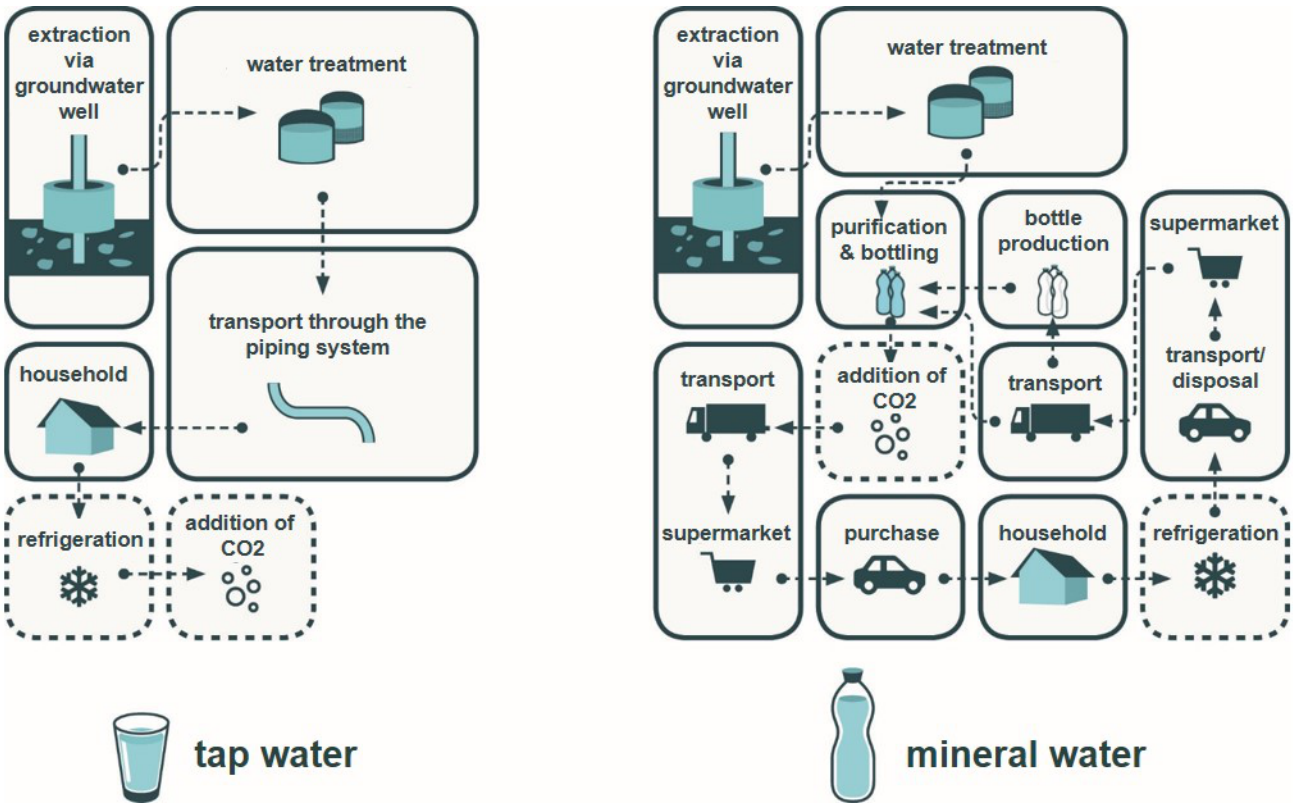

Figure 1: Comparison of Life Cycle of Tap vs. Bottled Water (source: *a tip:tap*)

provided for all members of the population, especially those who suffer a disadvantage or social exclusion". These principles have been reflected also in the revised EU Drinking Water Directive (European Commission, 2020), which states that the Member States should tackle the issue of access to water for all, by increasing relevant infrastructure in public spaces where technically feasible, and by promoting the use of tap water.

Promoting tap water consumption should be made a priority target for improving public and planetary health. In this commentary, we will highlight the significance of choosing tap over bottled water as well as other packaged beverages and discuss avenues for action and behavioural interventions.

Tap Water Drinking & Planetary Health

Drinking water from the tap has several environmental advantages over bottled water. This becomes most apparent when looking at the lifecycle of one bottle of water as shown in Figure 1. The starting point is the exploitation of oil or gas as feedstock for plastic bottle production or silicate to produce glass bottles. Energy is needed to form and produce the bottle, transport it to the water source, and pump water into it. Long transport routes of filled bottles across countries or continents into stores and from there to consumers' homes use further energy and emit CO2 (Botto, 2009; Fantin et al., 2014). After consumption, glass bottles have to be transported back and

cleaned to be reused and plastic bottles have to be recycled. However, only around 60% of plastic bottles are being recycled in the European Union, whereas the remaining plastic waste is going to landfills or polluting land, rivers, and oceans (van Calcar, & van Emmerik, 2019; Eunomia, 2020). Various steps in this life cycle also require water, and it has been estimated that, on average, it takes about 5.3 liters of regular water to produce a single 1-liter plastic bottle for water or soda (Ercin et al., 2011; Olson-Sawyer & Madel, 2020). Taking this whole life cycle into consideration, drinking water from the tap has been modelled to have a 1400–3500 times lower detrimental impact on the environment than bottled water, with the exact number depending on the respective setting and context (Villanueva et al., 2021).

The consumption of bottled water contributes to water wastage, air and land pollution (e.g. through uncontrolled disposal of plastic waste, transport and incineration), and climate change due to the higher CO2 emissions during production and transport.

Tap Water Drinking & Individual Health

Due to the previously presented effects on environmental aspects and climate change, the consumption of packaged beverages thus indirectly contributes to negative effects on the health of the population (World Health Organization; 2021a). Packaged beverages also include sugar-sweetened beverages, which add to the global burden of non-communicable, cardio-metabolic diseases (Malik & Hu, 2022, Malik et al., 2015). Consumption of sugar-sweetened beverages is associated with increased body weight and obesity (also among children; Williams et al., 2020; von Philipsborn et al., 2020), which also pose a risk factor for type 2 diabetes (Wu, 2019) and liver diseases (Charles-Messance, 2020). Individuals consuming 1-2 sugar-sweetened drinks (of the size of a can) per day were found to have a 26% increase in their risk of developing type 2 diabetes over individuals who rarely consume such beverages (Malik et al., 2010). Furthermore, sugar-sweetened beverages are associated with dental caries and loss of teeth (Bleich et al., 2018). A 17-year follow-up study found the risk for caries to be around 42% higher in children and adolescents with high sugar-sweetened beverage intake compared to those with low intake (Marshall, 2020). Switching to less energy-dense and ideally to sugar-free drinks is thus considered a priority for promoting health at all ages.

While prices for tap water differ significantly across countries and even within countries (International Water Association, 2019), and there is not yet a standardized method to evaluate its affordability, the price of tap water is generally more affordable than bottled beverages. The National Institute of Statistic in Italy, for example, calculated that in terms of unit cost (Euro per liter), household monthly expenditure on bottled mineral water was about 6,000 times higher than water billed for domestic use in 2018 (Istituto Nazionale di Statistica, 2019). Improving access to and consumption of tap water in households and public spaces – for individuals to be able to choose it as the preferred option for drinking – may thus contribute to the reduction of inequalities and social disparities for the well-being of all, including the poor population and marginalized groups.

Water is already one of the most popular – and healthiest – substitutes for sugar-sweetened beverages (Zheng et al., 2015). While bottled and tap water do not differ in terms of their benefits to human health, tap water is free or at a low charge and readily available at home and, in some countries, in public spaces. Still, many people are reluctant to consume tap water for different reasons. We, therefore, need interventions that specifically target the promotion of tap water consumption. In the following, we will discuss

barriers to tap water consumption and showcase interventions that have been designed to overcome these barriers with the goal to promote human and planetary health.

Perceived Barriers to Drinking Tap Water in WHO European Region

"The packaging and selling of something that is already [...] available" is one of marketing's greatest achievements (Queiroz et al., 2012, p. 328). Past marketing strategies for bottled water and water filters have shaped our perception of what safe and healthy water looks and tastes like and what type of water or packaging expresses a certain lifestyle (Brei, 2017). When taking action on promoting tap water, behavioral scientists need to consider influencing factors affecting perceptions about tap water, as described below.

Tap water is one of the best-controlled aliments in Europe, with few country- or context-specific exceptions. In many countries of the WHO European Region national legal standards exist that regulate health-relevant thresholds for contaminants, and surveillance is in place to ensure the safety of the drinking-water (United Nations and WHO, 2018). WHO/UNICEF data (2022) for the WHO European Region show that 95.10% of households have access to water free from fecal and priority chemical contamination (96.91% in the SDG Region of Europe and North America). Nevertheless, surveys from countries in Europe where drinking-water quality is monitored, revealed that perceived issues with safety and quality of the tap water are among the most reported reasons for avoidance. Respondents are mostly concerned about the presence of hormones, drug residues, nitrates, or pesticides in drinking water (ECORYS, 2015). In 2021, almost one household in three (28.5%) in Italy did not trust to drink tap water, stable compared to 2020, although this share has gradually decreased over time (40.1% in 2002; Istituto Nazionale di Statistica, 2022). This distrust showed a marked geographical variability: from 2% in some regions in the North and higher in the South with up to 60% on the Islands (Istituto Nazionale di Statistica, 2022). It is important to note that some areas where distrust was highest were also observed with the highest frequency of irregularities in the water supply (especially in the South). In addition, bottled water advertising strategies may have strengthened consumers' beliefs that tap water as compared to bottled mineral water would be of lower quality. For example, one advertising campaign showing a dirty water pipeline along the slogan "Our water stands everywhere except in the pipe" was admonished by the Centre for Protection against Unfair Competition in Germany in 2021. Other advertisements may imply a lack of essential micronutrients, e.g., by emphasizing "natural sources" or branding their product as "sports" waters, while claiming to increase concentration and performance. Micronutrients such as calcium and magnesium are indeed important for health, but they are commonly found in water (except for desalinated water) (WHO, 2009). On the contrary, hardness caused by the amount of calcium and magnesium in tap water may be even perceived as a negative attribute (as it may affect taste and turbidity) rather than a nutritional benefit, though calcium and magnesium may have a protective effect against cardiovascular mortality (World Health Organization, 2017).

Germany is one example of a country with high percentages of compliance for the quality of piped drinking-water (99% according to the German Environment Agency in 2019) and, at the same time, with high rates of bottled water consumption in Europe, underlining that research on tap water has to take regional and cultural differences into account. For instance, most consumers in Germany prefer carbonated water (Elmadfa & Meyer, 2015). Bottled water still is the most common source of carbonated water in Germany, however, more than

one quarter of consumers use a water carbonator to carbonate tap water at home (Statista, 2021).

Another prevalent misconception is that tap water does not taste as good as bottled water, though people were unable to distinguish between bottled and tap water in various taste tests (e.g., Debbeler et al., 2018; Jhuang et al., 2020). It is important to note that chlorine (used to disinfect water in some countries in Europe) as well as desalination, may indeed impact taste and odor. This may reduce consumers' preference for tap water and impede acceptance and effectiveness of water consumption interventions (Doria, 2010; Francis et al., 2015).

Finally, a barrier to choosing tap water exclusively over packaged beverages (at least at home) is the common belief that recycling eliminates the environmental impact of bottled water, showing that compensatory beliefs, as well as moral licensing, might be at play (e.g., "It is ok to drink bottled water as long as the bottles are being recycled"; Saylor et al., 2011).

How to overcome barriers to tap water consumption

While improving access to safe water remains an important issue – especially in those areas where the quality of drinking-water is not yet ensured at all times or where tap water is not accessible out of the home – it is evident that work remains to increase consumption in the many countries and regions where safe tap water is already accessible and safe to drink. Overcoming barriers at the individual level requires behavioural and cultural insights. Recent studies have focused on consumers' reasons and positive outcome expectancies regarding tap water consumption. Research suggests that individuals choose tap water because it is inexpensive, convenient, and good for the environment (Etale, et al., 2018; Geerts et al., 2020). In order to spread knowledge about the benefits of tap water, reduce preconceptions and promote tap water accessibility and use, interventions can be implemented on at least three different levels (von Philipsborn et al., 2020): International, national and regional *policies* (e.g., production, marketing, taxes), setting-based interventions in communities to change local food *environments* (e.g., pricing of sugar-sweetened beverages in cafeterias, installing drinking-water points), and behavioural interventions on the *individual level* (e.g., education, risk perception, social norms, and skills for self-regulation).

One factor on a policy level is *affordability*. This implies that the price of water should not present a barrier to access or prevent people from meeting their basic human needs. While continued efforts to ensure equitable tariffs are important, sharing information on the cost that is easy to understand, including the comparisons of bottled and tap water prices, through invoices or smartphone applications could also increase awareness about tap water affordability.

In 2021, an expert workshop by WHO Regional Office for Europe discussed barriers and facilitators for the promotion of drinking-water in general, with tap water being the preferred source of choice, identifying feasible actions for improvements in the Region and applicable at the national and local level (WHO, 2021b). The meeting collected a number of initiatives that were reported as well-received by the population. In the following, we will showcase four initiatives promoting tap water consumption in Europe. These represent also examples of measures suggested in the EU Drinking Water Directive (European Commission, 2020). We will focus on the active ingredients of each campaign in terms of pre-established labels for behaviour change techniques (BCTs; Michie et al., 2013). However, it is important to note, that local characteristics (e.g. water quality, infrastructure) and cultural differences need to be taken into consideration when planning interventions as well.

Estonia: Call for catering facilities to offer tap instead of bottled water (https://www.tallinn.ee/en/news/campaign-calls-companies-provide-tap-water-instead-bottled-water)

This campaign was launched by the City of Tallinn, the Estonian Hotel and Restaurant Association, and Talinna Vesi, the city's tap water provider, to promote eco-friendly catering. Local hotels, food outlets, and catering companies could join the initiative and show their support through badges displayed in their shops and on their websites. In return, they were also listed on the initiative's website, where interested customers could search the database to identify eco-friendly options (unfortunately the campaign is concluded, so the website is no longer available). This system builds on the following BCTs: introduction of environmental stimulus to "cue" tap water consumption, "material incentive", "non-specific incentive", "non-specific reward", "social reward", "social incentive". Indirectly, this also enables a "demonstration of the [desired] behaviour", i.e. offering tap water to customers, models behaviour that can be repeated at home. Moreover, participating restaurants can "[identify themselves] as role model[s]". For customers that choose to eat at participating restaurants for other reasons, the initiative may have an indirect effect on the awareness of consumers via "exposure" to easily available, good quality and behavioural friendly tap water. On the initiative's website, additional information on the safety of tap water was provided to address potential concerns of restaurants and customers alike ("information about health consequences").

Germany: Water Revolution and a tip:tap (https://atiptap.org/en/)

This initiative is financed by the German Federal Ministry for the Environment and targets various local stakeholders all over Germany. The intervention components are 1) information and campaigns on the benefits of drinking water at the local level (e.g., "water days" and promotional activities at fairs and markets), 2) education for citizens and workplaces to increase the demand and consumption for drinking water (education in schools, expert advice for private and public workplaces), and 3) the creation and promotion of access points to drinking water in public and private areas (planning, building and promoting water fountains in school and public spaces). With its diverse efforts, the non-profit organisation *a tip:tap* uses a number of effective BCTs, in particular "restructuring the physical environment" and "restructuring the social environment". The organization targets both individuals as well as private and public structures. The organization supports companies, schools, and kindergartens in testing their tap water to prove safety, installing tap water wells and consulting on how to swap bottled for tap water in cafeterias and business meetings. By implementing water projects and online seminars, *a tip:tap* intervenes on the BCTs "social and environmental consequences" of tap water consumption, "comparative imagining of future outcomes" and increases awareness on the "salience of consequences" for human and planetary health. As means of incentive, certificates for *tap-water-friendly schools* or *water districts* (town districts with tap water points) are issued for participating institutions. Figure 2 is an example of how *a tip:tap* builds a positive narrative on the "identity associated with changed behaviour" by highlighting the benefits of tap water consumption. In *tap water challenges*, the organization also aims to promote "self-monitoring of behaviour", (where individuals or companies track their tap water consumption).

Iceland: Kranavatn (https://kranavatn.inspiredbyiceland.com/)

"Kranavatn" is a social campaign consisting of a website accompanied by a series of advertisement videos focused on providing information on the benefits of tap water. The initiative makes use of cultural insights related to the close relationship of Iceland with nature highlighting the close

connection of tap water with natural resources and thus addressing the BCT "identity associated with changed behaviour". The commercials focus on education by providing "instruction on how to perform [the] behaviour" and showcasing the advantages of consuming tap water ("pros and cons", i.e. being free). Moreover, the commercials highlight the connection of tap water and the Icelandic nature, underlining the "identity associated with changed behaviour". Finally, consumers can show their commitment to mainly drinking tap water from reusable bottles by taking a pledge on the campaign's website.

United Kingdom: A map of water refill stations and water fountains (http://www.refill.org.uk)

The app Refill points users towards free water refill stations and water fountains. With the help of the app, users can find nearby food outlets where they can bring their containers or cups as well as shops that are suitable for plastic-free shopping. The app uses the following BCTs: "restructuring the physical environment" and "restructuring the social environment" as well as "changing exposure to cues for the behaviour" by increasing users' accessibility to cues in the environment through the information on where individuals can refill their bottles (provided both in the app and via stickers on shop windows and doors). The app also provides "feedback on behavior" by tracking the number of refills. In addition, the initiative's website offers information materials, which contribute to raising awareness and increasing the "salience of consequences" of plastic use with a specific focus on "social and environmental consequences" by making use of the water refill points.

Future Role of Behavioural Scientists in Tap Water Promotion

To better understand water consumption habits and socio-cultural influences, to design, and most importantly to evaluate promotion programs, we will need sound theoretical foundations. Behaviour change models for promoting the consumption of tap water on an individual level will have to include both health and environmental cognitions that shape individual motivation and beverage choice as well as take setting-based variables facilitating or hindering the behaviour into account. There are a number of promising theoretical approaches in health and environmental psychology, which may be used and adapted for the development and evaluation of tap water promotion programs. Such approaches need to be adaptable and should accommodate the following aspects:

- Consideration of individual-level, modifiable social-cognitive factors related to health and environmental concerns (e.g., health-related and environment-related outcome expectancies in social-cognitive theory, Bandura, 1998)
- Consideration of the social context of tap water consumption in the local context (e.g., social norms, van der Linden, 2013)
- Identification of potential variables for tailoring interventions (e.g., accessibility of tap water, educational status, gender, age, stage of change, Health Action Process Approach, Schwarzer, 2008)
- Putting tap water consumption (behaviour A) in context with other risk behaviours (behaviour B; sweetened beverage consumption; RANAS Model, Mosler et al., 2012)
- Consideration of cross-behavioural cognitions at the intersection between health and environmental psychology (e.g., compensatory health beliefs, transfer beliefs)

Most of the public campaigns and initiatives showcased above target motivational factors, such as knowledge on safety and benefits as well as cue-accessibility to prompt tap water consumption from an individual and local perspective. In order to change long-acquired habits, these strategies are a first step, but will need to be complemented by

BCTs to increase post-motivational (volitional) processes such as planning, self-monitoring of progress, healthy habit formation, and coping strategies (instead of focusing on the pre-motivational phase). Long-term behaviour change should be facilitated by establishing local and national policies and regulations for ensuring the accessibility and promotion of the consumption of safe tap water. Finally, behavioural research has repeatedly shown the importance of the physical environment for consumption behaviours (e.g., Hollands et al., 2017). Accordingly, interventions need to implement accessibility of safe tap water in households and in public spaces (squares, commercial areas, restaurants, schools, and workplaces). This may require changes to the physical environment, including adequate treatment devices, water fountains, or labels for outlets with safe tap water. Water should be accessible and affordable for all, including marginalized groups and people with disabilities.

The illustrated initiatives are examples of innovative programs and were reported as being well-received by the public (contributing to the feasibility), but they usually did not include a fine-grained evaluation of programme efficacy (e.g., in terms of change in water consumption, change in individual, regional, or planetary health), nor an evaluation of psychosocial factors explaining why a program was successful. Initiatives to promote tap water consumption should not only be theory- and evidence-based, but also, whenever possible, be accompanied by high-quality evaluations based on behaviour change theory using well-controlled study designs. Most importantly, future tap water interventions should be evaluated in terms of behavior and health outcomes, as well as in terms of changes in modifiable, psychosocial predictors of tap water consumption. It is these theory-based beliefs and perceptions that we can specifically target with behaviour change techniques.

We advocate the use of established frameworks to guide the development of informed interventions and policies (e.g., Behaviour Change Wheel, Michie et al., 2011; Medical Research Council framework for development and evaluation of complex interventions, Craig et al., 2008; Intervention Mapping, Bartholomew, et al., 1998; Guide to evaluating behaviourally and culturally informed health interventions in complex settings, WHO Regional Office for Europe, 2022). Adopting one of these structured approaches for the development of future tap water interventions will help establish a stronger evidence base as to whether, for whom, and why programs promoting the consumption of tap water work.

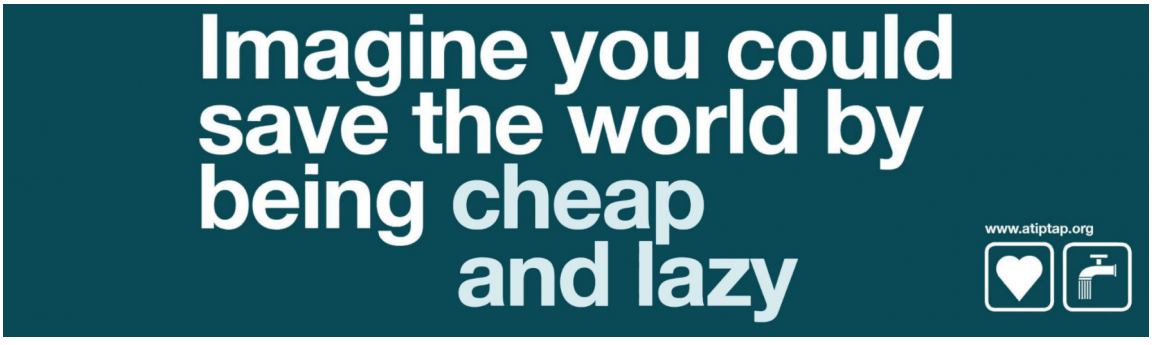

Figure 2 (source: *a tip:tap*)

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Original Article

One Health: A holistic perspective on the health and wellbeing of humans, animals, and our shared environment

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How closely human health is linked to that of animals and our environment has been more than clearly stressed by the Covid-19 pandemic. With intensive livestock farming, wildlife trading, and human expansion into untouched ecosystems, zoonotic pathogens emerge and spread more rapidly. The One Health approach is a concept recognising the systemic relations between human, animal, and environmental health. This holistic and transdisciplinary approach aims at promoting a healthy co-existence of humans, animals, and the ecosystem, to be achieved through a collaboration of different sectors and disciplines at global, regional, and local levels. Key issues of the One Health approach are for example food security, prevention of antimicrobial resistance, and the control of infectious diseases transmitting from animals to humans (zoonoses). Human behaviour plays a major role for reaching these aims. While certain behaviours can have negative impacts on the shared environment (e.g. littering or burning fossil fuel), others can be beneficial (e.g. active transport or reduced meat consumption). Many renowned organisations such as the World Health Organization, the Centres for Disease Control and Prevention, and the Food and Agriculture Organization of the United Nations have included the One Health approach in their programmes (see, for example: www.cdc.gov/onehealth). One Health is further reflected in the UN Sustainable Development Goals (SDGs) that promote human health (SDG 3) and climate action (SDG 13) as well as in the interconnectedness of the goals (SDG 17).

The impact of climate change on One Health

Tackling climate change is central in ensuring and promoting One Health. Human activities such as increasing mobility that relies on fossil fuels or industrial agriculture have been shown to negatively affect the environment and, consequently, the climate. Climate change in turn affects our planetary life support systems such as clean air and water, tolerable temperatures, and healthy and nutritious food. The mounting pressure on these environmental systems puts the health of humans and animals at risk. Climate change affects health either directly, for example by floods, heatwaves, fires, or water shortages, or indirectly, for instance through the spread of vector-borne diseases or food insecurity (so-called system-mediated impacts). Negative health consequences of climate change can also evolve through social, economic, or demographic disruptions. Examples are impacts on physical and mental health which arise from decreasing farming incomes through a climate-change-induced reduction in agricultural productivity or the emergence of armed conflicts.

What action should be taken to promote a healthy and sustainable future?

The One Health approach should be adopted in global, regional, and local policies, i.e. regarding urban housing, transport systems, energy systems, and food production. In designing and implementing developmental activities for these areas, impacts on human, animal, and environmental health need to be considered. In many areas, we can learn from nature when looking for solutions. One example is the multifunctionality that can be seen in nature, such as the waste-free natural cycle, which could serve as a model for the way we produce food. Most importantly, in all sectors, human development needs to be decoupled from environmental degradation. To ensure this, the impact on health and the environment needs to be taken into account when measuring development. The Australian National Development Index – an integrative and holistic measure of progress and wellbeing – may here serve as an encouraging example, as it showcases that such holistic measurements are feasible.

How can Health Psychology contribute to promoting One Health?

As the One Health approach puts special emphasis on human activities, Health Psychology can contribute by researching determinants of individual behaviour and behaviour change. Several behaviours can contribute to mitigating climate change while at the same time – directly or indirectly – promoting human health (Bain et al., 2016). These include, for example, an active mobility, a plant-based diet, recycling, or a safe sanitation. Next to these mitigation behaviours, adaptation behaviours can reduce negative environmental impacts on human health – for example, wearing face masks or flood-proofing one's home (Inauen et al., 2021; van Valkengoed & Steg, 2019). Consequently, several scholars have called for incorporating environmental health when researching human health in order to meet the complexity of environmental health issues (Bernard, 2019; Inauen et al., 2021; PCUN, 2021). For example, our diet has not only direct but also indirect effects on our health, as it impacts the environment, which, in turn, affects human health.

Yet, behaviour should not only be considered on the individual level but also from a systemic point of view. Taking into account the determining living conditions (e.g. infrastructure, policies, economic factors) should thus be of great importance. For example, integrated measures for health and wellbeing need to be developed and implemented that take into account the impact of climate change as well as mitigation and adaptation behaviours. Inter- and transdisciplinary research and the exchange of data is therefore crucial. In addition to the expertise found in universities, the knowhow of professionals, policy makers, or indigenous people should be considered. When expertise from different sectors and actors is combined in a joint force, health threats can be encountered best.

From a One Health perspective, important next steps should be using the recovery from the Covid-19 pandemic to accelerate sustainable change. The pandemic has forced us to rethink and adjust the way we travel, work, and design our economies. We should use this opportunity to place a stronger emphasis on One Health. Only when the interdependence between human health and that of animals and our ecosystem is acknowledged can we take on responsibility for our shared environment and build back better.

The article is based in part on the panel discussion „Climate Change and One Health: Critical Action for a Sustainable Planet" conducted at the World Health Summit, on October 26, 2020. The session was chaired by Prof. Dr. Andrea Winkler, Co-Chair of the Lancet One Health Commission, Germany. Speakers were: Dr. John Amuasi, Co-Chair of The Lancet One Health Commission, Ghana; Prof. Dr. Tony Capon, Director of the Monash Sustainable Development Institute, Australia; Prof. Dr. Sabine Gabrysch, Professor for Climate Change and Health at the Charité Berlin, Germany; Dr. Benjamin Roche, Research Director at the Research Institute for Development (IRD), France. The panel discussion can be accessed via this link: https://www.youtube.com/watch?v=HT3trDYTkBY

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Interview

Interview with Philipp Kadel: Psychology and the One Health approach

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Introduction

Philipp Kadel is a researcher and PhD student at the Department of Health Psychology and the Center for Doctoral Studies in Social and Behavioral Sciences at the University of Mannheim, Germany. In his research, he focuses on behaviours simultaneously beneficial for both the environment and human health, like following a meat-reduced diet. As part of his work in the Psychology Coalition at the United Nations (PCUN), he promotes the One Health approach and its role for psychological research.

• How did you come to promote One Health?

Ever since developing my PhD topic, I have always had the goal to do research on behaviours that have positive impacts on our individual health as well as our environment. Luckily, there are several of these *environment-friendly health behaviours*, like following a meat-reduced diet, or choosing active modes of transport instead of going by car. Even though I did not think of those in the context of One Health at the time, they fit very well with the idea of recognising the interconnection between humans, animals, plants, and our shared environment. By promoting behaviours with such co-benefits, we can achieve improvements of several dimensions of One Health at the same time – a thought that to me is immensely attractive and motivating.

• Why do you think that the One Health approach should gain attention?

In my opinion, we as researchers have for too long treated and investigated topics that all relate to One Health as distinct phenomena in separate research areas without a lot of exchange. Emphasising and acknowledging their interrelatedness helps us to gain a broader and deeper understanding of the underlying system. At the same time, I think that One Health can also be very valuable in communicating the importance of our findings and also the impact of our behaviours. If we can point out, for example, that the protection of our environment and endangered species is not only an idealistic endeavour but has direct implications for our own health and wellbeing, positive behaviour change might become more likely.

• What opportunities do you see for (Health) Psychology with a view to promoting One Health?

As human behaviour plays a major role in promoting One Health, Psychology as a discipline concerned with understanding, predicting, and changing behaviour has much to contribute. Health Psychology in particular has developed applicable theories and mechanisms for behaviour change. In most cases, these can be applied beyond classical health behaviours and can also be used to promote environment-friendly behaviours or, as mentioned before, environment-friendly health behaviours that have co-benefits for several aspects of One

Health at the same time. In my opinion, these behaviours could become even more prominent in Health Psychological Research.

- **How could the EHPS contribute to promoting One Health?**

As I was lucky enough to experience, there are many exceptional researchers at all career levels within the EHPS that are passionate about topics related to One Health. Fortunately, the EHPS provides a possibility for those people to come together and exchange insights and ideas. The work of the Special Interest Group "Equity, Global Health and Sustainability" also greatly contributes to promoting a holistic perspective on health within the EHPS. Over the last years, there have been several presentations and roundtables at the annual EHPS conference related to the topic of One Health. If it could become the topic of a future Summer School, for example, or if One Health could even become its own track, I think that would be fantastic.

- **As part of your work in the Psychology Coalition at the United Nations (PCUN), you and other PCUN members have published several statements on psychological perspectives on One Health. Can you give a short summary of these statements?**

We, the author team, are convinced that *building back better* after the pandemic and ensuring the wellbeing of all life forms requires a holistic perspective on health that acknowledges the interconnectedness between humans, animals, and our environment. Additionally, we emphasise that achieving One Health is also a matter of global justice. The contributions to climate change and environmental degradation and their negative consequences are unequally distributed across the globe. As Psychologists, we aimed to point out the importance of human behaviour in promoting One Health. From Mitigation Behaviours to Adaptation Behaviours, our own doing plays a major role in shaping the future of the planet and our species. Psychological science has a lot to contribute when developing interventions and policies. We outline different theories and mechanisms of behaviour change and derive recommendations for UN agencies, governments, NGOs, the private sector, and the civil society to ensure a healthy planet with healthy people.

- **What were your (PCUN's) reasons for publishing statements on One Health?**

Our main goal was to emphasise the potential of psychological research in the promotion of One Health. Psychology might not be the first discipline that comes to a policy maker's mind when thinking about One Health, but as a discipline investigating human behaviour, we have a lot to bring to the table. This needs to be made known.

- **What recommendations do you give in the statements that could be adopted by researchers?**

Our recommendations, ten in total, mainly addressed actors outside of academia, like governments, NGOs, and the private sector. For example, we emphasise the need to develop communication strategies that point out the interdependence of human, animal, and environmental health with the goal of developing a shared identity and collective efficacy in achieving One Health. Specific and vivid narratives should be used in public campaigns. Psychologists should be included in the development of actionable policies and practices. We also propose that interventions should be targeted to specific audiences and populations to maximise the benefits for One Health.

- **You also presented the One Health approach at the side event "Recalibrating & Rethinking Sustainable Future: The Importance of Health, Wellbeing & Empathy" of the ECOSOC (Economic and Social Council of the UN) Youth Forum, which was co-sponsored by the EHPS.What were your experiences with presenting One Health to such a diverse audience?**

I am always happy to exchange ideas and thoughts with people from different disciplines and backgrounds. I think it is very valuable for Health Psychology to spread our research as widely as possible and equally valuable to learn about insights from other disciplines. This is especially true in the context of One Health, which by definition is a transdisciplinary approach. What I liked about the event was that it was not solely academic but also included speakers with a lot of practical experience in promoting health and wellbeing in various ways.

- **What discussions related to One Health were raised during the event?**

One aspect that came up during the event was the global justice aspect of One Health. As mentioned before, the contributions to and negative consequences suffered from climate change, for example, are unequally distributed between regions and countries. Globally, more greenhouse gas emissions are caused by the people in the top 1 % of the income distribution than by the lower 50 %. However, the negative consequences of climate change and environmental degradation are mainly suffered by poorer people and regions. Interventions aiming to promote One Health, therefore, need to be tailored to different populations and audiences. While some might contribute most to One Health by promoting Adaptation Behaviours, others could achieve most by focusing on Mitigation Behaviours.

- **What did you take away from the event regarding One Health and developing a sustainable future?**

As the event was so diverse and multidisciplinary, I think one of my main takeaways was the certainty that we will only succeed in promoting One Health if many people from all regions, disciplines and backgrounds each contribute their part. No single scientific, political or societal actor will be able to achieve this alone. On the flip side, this also means that everyone can contribute something to promoting One Health.

- **There are also other, related concepts to One Health, for example Planetary Health. Are these mainly different names for the same concept, or are there differences?**

I think what is most important is that all these disciplines have similar goals, namely, to promote the health of humans, other lifeforms, and our environment. You find differences in the definitions of One Health, Planetary Health or Holistic Health which partially might be due to their respective origins. As long as we keep communicating and cooperate in achieving the overarching goal, I think the label is secondary.

- **What are your plans for promoting One Health in future? Which obstacles might have to be overcome?**

I will certainly try to conduct research that can help us in promoting One Health. Thereby, I also aim to bring the topic into the focus of fellow researchers. Additionally, I am a big believer in bringing our research and insights to a wider audience. Therefore, I am always happy to give talks or write statements for an audience outside and inside of academia. A big challenge in achieving One Health is certainly that it requires

many different actors to work together for a common goal but then again, every small contribution counts.

• To conclude, what would you like readers to take away?

I think we as health psychologists and everyone else interested in promoting people's wellbeing can only profit from broadening our understanding of health as a concept and acknowledging the interrelation of our own health with the health of fellow lifeforms and our environment. This can also mean bringing new behaviours into the focus of our research and interventions. Secondly, as stated before, I think that we as Psychologists have a lot to contribute when it comes to promoting One Health. We do have a lot to bring to the table – and we should.

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Position Paper

Every action matters: Reducing the climate impact of EHPS conferences

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The Intergovernmental Panel on Climate Change (IPCC) now clearly states that the existing adverse impacts of human-induced climate change on the natural world are "beyond natural climate variability" (2022). The report states that it is more likely than not that the 1.5°C global warming threshold will be reached before 2040 even in a very low greenhouse gas scenario, and that adaptation to many climate risks will likely become constrained and have reduced effectiveness once this happens.

As scientists working in the health field, we know about the connection between global environmental change and human health (Inauen et al., 2021). There is more and more data emerging on how changes to our environment affect our health (see here https://www.thelancet.com/journals/lanplh/home). Health Psychologists across the planet have been developing interventions to support health behaviour change and know about the health co-benefits of some mitigation and adaptation behaviours (e.g. reducing meat consumption). Knowledge amassed on human behaviour change for health can be used to support bottom-up (Chevance et al., 2021) and top-down initiatives (Sniehotta et al., 2017) that target mitigation and adaptation efforts.

As a response to the overwhelming evidence highlighting human activity as a key accelerating factor in global warming the Special Interest Group *"Equity, Global Health, and Sustainability"* within the European Health Psychology Society (EHPS) set out to assess what we, as a society, can do to reduce the environmental impact of our annual meetings. You may have read our first European Health Psychologist (EHP) paper on "How to make EHPS conferences more climate-friendly" (Warner et al., 2022). Herein, we discussed that the largest impact of conferences on planetary health is, by far, emissions produced by traveling to in-person conferences (Neugebauer et al., 2020). Ideas for other conference formats (e.g. hybrid, online-only, bi-annual face-to-face or online; face-to-face in each member country and linking internationally online, etc.) have already been put forward, and the executive committee of the EHPS engages in ongoing discussions with EHPS members.

Apart from reducing the carbon footprint associated with conference travel, the organization of conferences themselves can be optimized to reduce emissions. One obvious target is food (Bossdorf et al., 2010). The life cycle of plant-based foods produces substantially lower carbon emissions than animal products (Poore et al., 2019). Importantly, eating more plant-based food is also good for human health: the risk for chronic (e.g. diabetes, overweight, coronary heart diseases) and infectious diseases (e.g. zoonotic viruses, antibiotic resistance) can be lowered by reducing the consumption of animal products, especially meat (Willett et al., 2019; Espinosa et al., 2020).

Thus, the planetary health diet, which considers both planetary boundaries and human health, consists of predominantly plant-based foods and recommends a maximum of 300g of meat per week per person (developed by the EAT-Lancet commission; Willett et al., 2019).

Catering plays an important role in this necessary societal dietary change. The choice architecture and the overall foodscape set up by caterers can influence individual food choices (e.g., availability, defaults, labelling, and tastiness of options; see e.g., Ensaff, 2021; Garnett et al., 2019, Hansen et al., 2021). Menu options (e.g., 4 meat and 2 vegetarian dishes) may communicate social norms about what other people normally eat (Raghoebar et al., 2020), which may be an important lever for changing these societal norms. Offering a sufficient variety of attractive, affordable, and healthy plant-based food options also prevents people, who do not want to eat certain animal products due to health issues, moral reasons, or religious beliefs, from being disadvantaged.

In that first EHP sustainability paper, we published a short survey to assess EHPS delegates' acceptance of plant-based meals as a default catering options at in-person conferences, and to ask for further ideas to reduce the environmental impact of future EHPS conferences. In the current paper, we report the results of the survey and reflect on our first, almost fully vegetarian day (if it weren't for the "fish incident") at this year's conference in Bratislava.

Acceptability of plant-based food during EHPS conferences

The 4-item survey was deployed from mid-April to early June 2022 and 61 EHPS members responded. We asked them: *"To what extent do you eat a plant-based diet in your everyday life?"*. Figure 1 shows that almost a quarter of the respondents did not routinely eat meat, while another two quarters either ate meat infrequently or were trying to reduce consumption of it. Twelve percent of respondents ate meat and were not trying to reduce it [1] .

Despite most participants reporting eating at least some meat, we found high support for the reduction of meals including meat at our

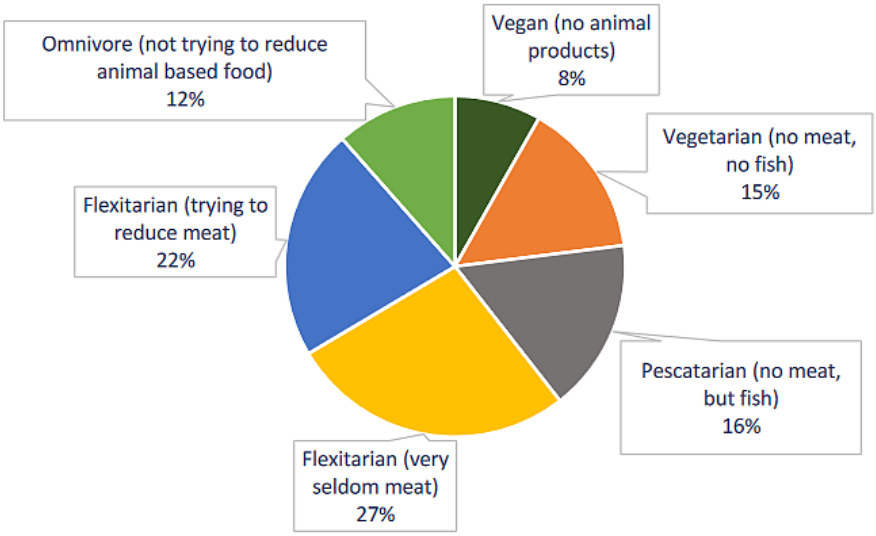

Figure 1: Quantitative results on food preferences of respondents (n = 61)

[1] It is possible that these self-reports come from meat conscious-consumers and that the sample may be biased by social desirability.

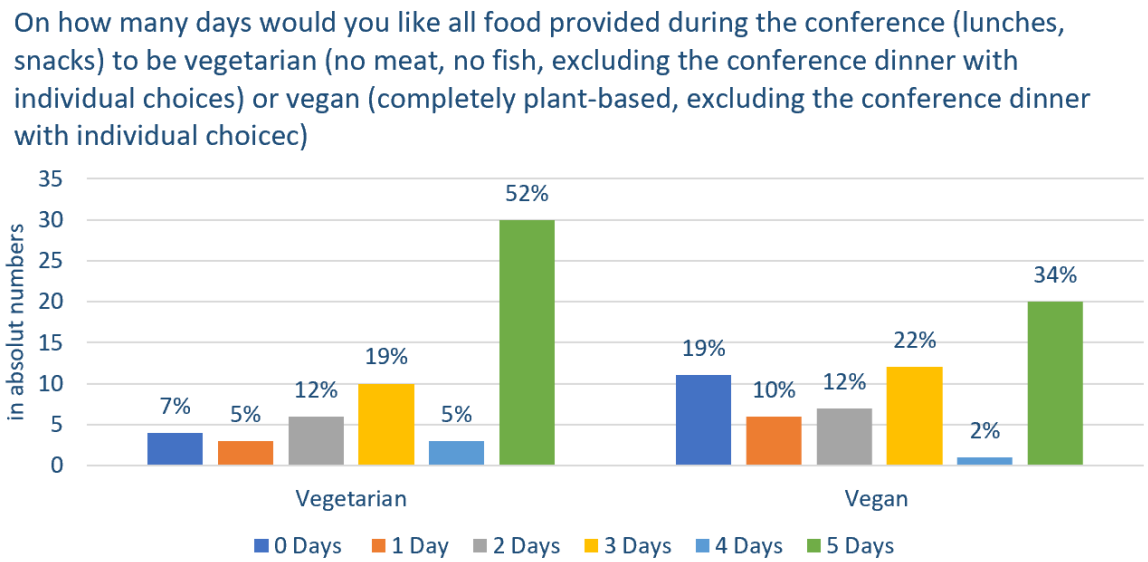

Figure 2: Preferences for vegetarian or vegan catering provided during in-person EHPS conference assessed in early 2022 (n = 58)

conferences (see Figure 2), which underlines that such changes would not only be supported by vegetarians and vegans.

Figure 2 depicts the number of days participants preferred to eat vegetarian or vegan food during in-person EHPS conferences (assessed prior to the Bratislava conference). Only a minority said they did not want to eat vegan or vegetarian food at all. Vegetarian meals were preferred to vegan meals, should they become the default options. Overall, the responding EHPS members would support 3-5 fully vegetarian days and/or 2-5 fully vegan days.

We also asked delegates to comment on this question: "*What is your opinion on introducing veggie or vegan days, or entire veggie or vegan EHPS conferences?*". Table 1 summarises these comments in categories and indicates how many people made similar comments.

Most comments included appreciation of the initiative to reduce meals with meat during EHPS conferences. A third of respondents suggested a level of compromise enabling the shift towards catering with more vegetarian and vegan options over time, while evaluating acceptability of this change among the delegates. Some respondents also highlighted the need for sustainable catering that is tasty and nutritious, which they thought could increase acceptability and decrease resistance to the possible changes in catering. Lastly, two participants highlighted the importance of inclusivity of preferences and choices for everyone.

The quantitative and qualitative data show that the vast majority of the participants were very supportive of the initiative to reduce meat and increase plant-based food at future EHPS conferences. One of the most acceptable ways to do this, according to the participants, would be to introduce a compromise either in the number of days on which vegetarian and vegan options are the default catering options, or offering a greater variety of meals, which would represent the preferences in this survey.

Experiences with the first vegetarian lunch buffet at EHPS 2022 in Bratislava

Preliminary results of this survey led to the first attempt to introduce a vegetarian day at this year's EHPS conference in Bratislava.

There was, however, one lesson learned, later referred to as the "fish incident" by Radomír Masaryk in his farewell speech. Long story short, we conclude that future organising committees

Table 1: Summary of open answers towards "introducing veggie or vegan days or entire veggie or vegan EHPS conferences" (n = 54)

Categories	Examples	n
Positive feedback	– Great idea – A great initiative – Highly appreciated	34
Compromise	– Only vegetarian – Perhaps taking a "flexitarian" approach to begin with, reducing the amount of meat offered while increasing the number of veggie/vegan options. Over time the conference can become completely vegetarian/vegan – Good as addition, not as a replacement – Would be a good idea to try this for a day or two – Gradually introduce vegetarian with some vegan options	12
Taste	– MUST be good quality to swing meat eaters over – All depends on the competence of the menus - poor menus will result in future resistance – If the food is tasty people don't care most of the time (except if specific condition) :) but vegan is often bland (vegetarian speaking here) – As long as the food is tasty and nourishing, I wouldn't miss animal products in it.	6
Dietary needs	– I respect the idea but need to eat meat for health reasons. Allergies limit my veggie options and the limited vegan food I could eat would just make me hungry and angry. – I agree that it is highly important to reduce meat consumption. This, however, does not mean that completely excluding meat from the diet is healthy for everyone. Some people may have non-veggie dietary needs and it is important to take that into account. – Keep allergies in mind (soy and nuts are frequently used in vegan alternatives)	5
Suggestions	– I eat meat but would be fine for vegan or veggie-only days. Maybe mixed up and people encouraged to experiment and leave feedback – Not sure whether full switches are wiser than gross asymmetries in offers (i.e. in a buffet with 12 dishes, 5 vegan, 5 vegetarian, 2 fish/poultry/meat). – Suggest flipping the usual approach - default food provided is veggie and people can request "meat-option"	3
Negative feedback	– I think it's wonderful to offer this choice, but it's not okay to force people to this – The Self-Determination Theory people will dislike how controlling it is.	2

may want to put additional effort into communicating the catering needs of the society to the conference venue or the caterers, making sure that the requests can be accommodated. Cultural differences and traditions must be considered, as the level of discussion on sustainability and food choices may differ between countries (e.g., food in Slovakia tends to be served on ceramic plates or in glassware rather than on dishes made of recyclable materials). Meat is often an important part of local culinary tradition in some countries. However, research shows (Hansen et al., 2021) that introducing exclusively meat-free options in community meal settings such as conferences tends to be accepted, if these options are presented as default and are not particularly advertised.

Table 2: A summary of EHPS members' ideas to further reduce the environmental impact of future EHPS conferences (n = 37)

Categories	Examples	n
Transportation	– Setting up car-pooling networks, ridesharing – Provide lots of info on the best way to travel to conference location from other countries – Minibus travel (with ferries if needed) to conferences or more encouragement (perhaps even with incentives) for train travel. – Enabling people to travel by train – setting up joint travels so that networking can start on the go, perhaps? – Offer support in traveling by train (e.g., by providing a route description from different starting points) – Conference and accommodation in 1 place (limited travel during conference)	12
Digitalization	– Program & everything fully online (no printouts), maybe a conference app? – Electronic posters – No printing – Digitize everything	8
Resource saving	– Minimize single-use cups or cutlery, minimize paper and other things given out by the conference. – Paperless – Trying to adapt to the climate by using a minimum of heating/aircon machinery, through proper clothing, or outside venues in the case of hot weather circumstances – Not having a material 'welcome kit'. – No conference bags/pens/notepads or brochures	6
Reusable material	– Introduce reusable coffee cups – Less plastic water bottles and branded paper provided by conference (but ensure places to fill up own bottle). – Reusable name tags; no disposable cups – Eliminating one-way use things or, if necessary, only having biodegradable one-way use things – Water fountains and a reusable water bottle for all in conference packs plus reusable coffee cups. You can get ones that do both. Less washing and waste (the cups at conferences are usually so small that people often have 2 cups, meaning more washing up at the high temps of industrial washers).	5
Remote participation	– Offer hybrid means of attending – Making digital participation more engaging, facilitating online networking	5
Plastic reduction	– Other initiatives are taken for paper/plastic reduction, which is already on a good path – Plastic free!	4
Other suggestions	– Option for participants to pay for CO_2 compensation – In each place where the conference takes place we should promote a "soapbox" event to showcase to the community and local stakeholders how to implement environmentally-friendly behaviour – I was wondering about ways to reduce technology use. Do we really all need to use PowerPoint - can we just talk through our studies	3
Environmentally friendly products	– No goodies, lanyards, etc., no bottled water, no bananas, less cocoa, careful with the coffee for its massive carbon footprint (17 kg CO_2 equivalent emissions per kg of coffee). – Strongly relying on local products and reducing the amount of imported ones as much as possible	2
Conference location	– Transportation remains the most important as written in the paper, but the choice of next place should be made with accessibility in mind	1

Further ideas on how to make EHPS conferences more climate-friendly

In addition to exploring EHPS members' views on conference catering options, we asked them: "Which further ideas do you have for environmentally-friendly actions that could be implemented before or during the 2022 EHPS conference?". Table 2 summarises their comments

and indicates how often these ideas were echoed within the sample.

Most participants were concerned about the impact of traveling on the conference's carbon footprint and suggested that hybrid conferences could help lower this impact for delegates who would normally fly to attend. Others suggested that information about more environmentally friendly modes of transport should be provided to delegates attending in person. This could include teaming up with train operators or getting special rates for tickets or even Interrail (instead of, or in addition to special rates by airlines for delegates who have no land connection) for future conferences. A possible option to reduce the environmental impact of the conferences might also be to choose university venues or prioritise hotels implementing the EU Eco-Management and Audit Scheme or those performing well in the Hotel Carbon Measurement Initiative (Zotova et al., 2020).

Many delegates were concerned about (single) use of resources. For example, printouts of brochures, programs, posters, or branded writing pads could be reduced if delegates switched to electronic note-taking or if these materials were available in a conference app. However, some delegates prefer to use the printed program instead of an app. A solution might be to print the program using recycled paper. Evidence to support or discourage the use of electronic posters instead of physical ones with the aim to reduce the environmental impact of conferences is beginning to emerge, but it is still mostly inconclusive, and enabling electronic posters for larger conferences may not be feasible in venues that do not provide sufficient equipment (Leochico, Di Giusto, & Mitre, 2021).

Online as well as hybrid (or bi-annually changing) conference forms are being discussed among EHPS members and the Executive Committee for conferences following the 2023 conference in Bremen. To estimate the environmental impact of the last in-person conference in Dubrovnik in comparison with this year's hybrid conference in Bratislava, we have also asked questions about the delegate's travel modes in the post-conference survey this year, and we will report the results soon.

Single-use cups and cutlery have sharply decreased at events in Europe, and future EHPS conferences could follow this trend. To acknowledge the effort of the local organising committee, the special interest group in Equality, global health and sustainability, and the support of EHPS delegates, we also want to highlight what we have, collectively, achieved this year. In Bratislava, lanyards for nametags were generic and can be reused at future conferences. Nametag holders were also be collected and can be reused, so bring your lanyard and name tag holder next year if you wish! As part of the initiative, the Bratislava team also offered more durable metallic pens with university branding (no plastic EHPS 2022 pens), a bag that was multi-purpose, maps and brochures on request, kept on the registration desk for those who wanted one, and glass water bottles to be returned at the end of the conference. To summarise, the sustainability efforts of the EHPS community have already sharply increased compared to previous conferences.

There is still room for improvement and for further creative ideas from all of us to help make EHPS conferences more sustainable. The 2023 Bremen team will now take these suggestions on board, and continue to facilitate the collaborative change within our society.

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