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Editorial:
**Health Behaviour: Sexually Transmitted Infection Prevention Behaviour, Sun
Protection Behaviour, Medication Non-Adherence, and Health Professional
Behaviour**

Mark Conner and Paul Norman

The current special issue of *Psychology & Health* follows on from similar special issues published in 2017 (Conner & Norman, 2017) and 2019 (Conner & Norman, 2019) in focusing on an important topic for contemporary health psychology; namely, health behaviour. The study of health behaviours in terms of their definition, measurement, prevalence, determinants and effectiveness of interventions has been and remains an important focus in health psychology. These special issues of *Psychology & Health* bring together state of the art reviews on key health behaviours authored by experts in the field. Each review aims to provide an overview of what is currently known about a specific health behaviour in relation to *definitions, impacts on health, prevalence* in different groups, *key determinants, and effectiveness of interventions*, as well as providing *future directions* for research. As we previously argued (Conner & Norman, 2017, 2019), such state of the art reviews can both be useful sources of information and stimulate new research and so be useful to a broad range of readers, from those with little knowledge of the area to those actively involved with research on these health behaviours. These reviews also highlight what is unique about specific health behaviours, knowledge that can be lost in more general reviews.

The three special issues of *Psychology & Health* provide comprehensive reviews of a broad range of important health behaviours and, as such, represent a useful resource for those working on each health behaviour or interested in learning about work on each health behaviour (Table 1). The previous two special issues focused on healthy diet, physical activity, binge drinking, smoking, opioid use and misuse, cancer screening, and blood and organ donation. The current special issue includes reviews on sexually transmitted infection prevention behaviours (De Wit et al., 2023), sun protection behaviours (Julian et al., 2023), medication non-adherence (Horne et al., 2023), and health professional behaviours (Patey et al., 2023). The behaviours covered across the three special issues are a regular focus of attention for articles published in *Psychology & Health*. For example, recent issues of *Psychology & Health* have seen papers focusing on the health behaviours covered in the current special issues (sexual behaviours: Brasileiro et al., 2022; sun

protection: Bowers et al., 2022; medication adherence: Harvey et al., 2022; health professional behaviours: Hobby et al., 2022) as well as health behaviours that appeared in the earlier special issues on this topic (physical activity/sedentary behaviour: Dillon, Rollo, & Prapavessis, 2022; Kalajas-Tilga et al., 2022; Vogel et al., 2022; smoking: Grogan et al., 2022; Sorgen et al., 2022; Schwaninger et al., 2022; screening: Stuart & D'Lima, 2022; alcohol use: Montanaro & Magnan, 2022).

The current editorial comments on the complexity of defining health behaviours, single versus multiple health behaviours and goals, multilevel models of health behaviours, and differences between the initiation, maintenance and completion of health behaviours. In some cases these are issues that have been touched upon in editorials to the previous two health behaviour special issues (Conner & Norman, 2017, 2019).

Defining complex behaviours

Each of the four papers in the current special issue point to the complexity of defining each health behaviour under review. This is perhaps clearest in relation to sun protection behaviours (Julian et al., 2023). The widely advocated sun protection behaviours (e.g., seeking shade, wearing protective clothing, using sunscreen, avoiding being outside at certain times of day or in specific weather) are each complex behaviours that may require preparatory actions (e.g., obtaining protective clothing or sunscreen). As Julian et al. (2023) note, this can have important implications for accurate measurement of the behaviour with concomitant consequences for estimates of prevalence as well as accurate identification of correlates and effective intervention. This is a problem for many health behaviours which have to rely on self-reports of engagement in complex actions with associated reliability and validity measurement issues. Indeed, reliable and valid non-self-report (objective) measures of engagement with health behaviours is relatively rare (e.g., records of health screening attendance; medication event monitoring systems) in the area. While a focus on the health outcomes of engagement with health behaviours (e.g., skin damage due to excessive sun exposure) themselves introduce different problems (e.g., the degree of link between the behaviour and the outcome). For example, Horne et al. (2023) note the problems with using undetectable viral load as an objective measure of adherence to anti-retroviral medication in HIV.

Single/multiple health behaviours and single/multiple goals

A further issue in several of the health behaviours reviewed in this special issue is the idea that the same health outcome or goal can be achieved through different behaviours or a combination of behaviours (i.e., equifinality; see Kruglanski et al., 2015). For

example, in relation to sun protection behaviours (Julian et al., 2023), reducing sun exposure can be achieved via seeking shade, wearing protective clothing, using sunscreen, and/or avoiding being outside at certain times of day or in specific weather. These specific behaviours can be used in isolation or in combination. Similarly in relation to sexually transmitted infection prevention (De Wit et al., 2023), multiple individual sexual behaviours (or combinations) may be selected in order to achieve the goal of infection prevention, including abstinence, condom use and vaccination. This raises the issue of how individuals choose between behaviours in relation to a health outcome. Bagozzi (1992) suggested that three inter-related processes drive the selection of the behaviour or means to achieve a goal linked to self-efficacy and instrumental and affective beliefs about each behaviour. First, individuals will more likely select behaviours for which they perceive greater self-efficacy. Second, individuals will more likely select behaviours perceived likely to lead to the desired outcome or goal. Third, individuals will more likely select behaviours they find more desirable. Further research that explores the factors influencing the selection of different individual or combinations of health behaviours directed towards a single health goal would be valuable. This may be particularly valuable when particular behaviours or combinations of behaviours are more strongly associated with health outcomes.

A related issue that also needs further attention in the health behaviour area is the idea of multiple goal pursuit. This might be in relation to pursuing various different health goals or how health goals fit in with the pursuit of non-health goals. A focus on state of the art reviews of specific individual health behaviours (i.e., the focus of this special issue) should not completely distract attention away from the idea that engaging in one health behaviour takes place in the context of pursuing multiple other goals. For example, Patey et al. (2023) note the many different behaviours that healthcare professionals are required to engage in providing care for others. The major theories used in relation to predicting health behaviours (e.g., Theory of Planned Behaviour; Social Cognitive Theory) focus on the determinants of single behavioural goals but neglect how individuals navigate between multiple, varied goals (Lowe et al., 2017). There has been only limited attention given to goal enhancement (e.g., Rhodes & Blanchard, 2008), goal conflict (e.g., Pesseau et al., 2013), and goal prioritization (e.g., Conner et al., 2016) in the health behaviour domain. *Goal prioritization* may represent a key concept for understanding multiple goal pursuit (Unsworth, Yeo, & Beck, 2014). It refers to temporary increases in the importance attached to, and resources directed towards, one or more goals compared to other goals in the service of benefiting performance of the prioritized behaviour. Similar to Bagozzi (1992),

Unsworth et al. (2014) suggest that priority is given to goals with high informational value (e.g., the focal goal facilitates other higher- and lower-order goals), high affective value (i.e., attainment of the goal engenders positive affect), and high expectancy (i.e., allocation of resources to the goal is feasible). Conner et al. (2022) argue that prioritizing a goal might promote performance of that goal through increased goal activation promoting the translation of goals into action, better scheduling of goal directed action, and greater commitment of time and effort. Further research on understanding the pursuit of multiple health goals, on how individuals combine the pursuit of health and non-health goals, and how best to promote the health behaviour change in the context of multiple goal pursuit is an important future direction for research. Goal prioritization may provide one useful focus here, although it is by no means the only useful approach. For example, addressing conflicts between goals may also be a useful approach.

Multi-level models of health behaviours

A further theme raised in several of the special issue papers is the growing sophistication of models to predict health behaviours and direct interventions to change such behaviours. For example, De Wit et al. (2023) note that in relation to STI prevention there has been a move away from models only focusing on individual-level influences such as the Theory of Planned Behaviour to social ecological models that put such influences in the context at other levels of influences. Julian et al. (2023) also note the use of social ecological models in relation to directing interventions to promote sun protection behaviours. The social ecological model of McLeroy et al. (1988) draws attention to the idea that intrapersonal factors tapped by models such as the Theory of Planned Behaviour are the lowest level of factors influencing behaviour. Higher level factors are grouped into interpersonal/network factors, institutional factors, community factors and public policy. Such models sacrifice a degree of parsimony but have the benefit of focusing attention beyond just the individual. This may be a useful switch of focus, although we should not under-estimate the potential complexity of such models that try to take account of influences at different levels as well as the interactions between levels. As argued by Horne et al. (2023), the effects of higher level factors are likely to be mediated by lower level factors such as individuals' motivations and abilities. Higher level factors may also moderate the influence of lower level factors on health behaviour. For example, Schüz et al. (2021) reported that relative deprivation moderated the intention-behaviour relationship for COVID-19 protection behaviours, such that the strength of the relationship decreased with increasing levels of relative deprivation.

The value of multi-level models can also be judged in terms of their impact on improving the effectiveness of interventions to change health behaviours. It is clear that some degree of consideration of influences at different levels is warranted in relation to many health behaviours. To provide a simple example, research indicates that there may be variation in the importance of intrapersonal factors like behavioural intentions and self-efficacy for different social class groups (Schüz, 2017; Schüz et al., 2021). This might point to the need for targeted interventions that go beyond attempts to increase intentions and self-efficacy in some social class groups (see Schüz & Webb Hooper, 2020). Schüz and Webb Hooper (2020) point to the culturally specific interventions being more effective. In support of this view, Lucas et al. (2021) showed that loss-framed (compared to gain-framed) messages were more effective in promoting colorectal cancer screening in African Americans, but only when culturally targeted. Relatedly, new influences on each health behaviour may become more prominent over time. For example, the recent COVID-19 pandemic has drawn attention to factors like vaccine hesitancy and trust in health advice (see Caso et al., 2022 for one example).

Initiation, maintenance and completion of health behaviours

A final issue that the current set of reviews draw attention to are variations between health behaviours in relation to what level of on-going engagement is required for (positive or negative) health outcomes to accrue. For example, in relation to medication non-adherence the most positive health benefits are likely most strongly associated with full adherence to a course of medication (Horne et al., 2023); in relation to antibiotic medication it is not just the initiation but also the completion of a course of antibiotics that we wish to encourage. In contrast, in relation to sexually transmitted infection prevention behaviours and sun protection behaviours the most positive health benefits are associated with long-term performance. Here initiation is necessary but not sufficient for maximum health benefit to accrue which will rather be associated with maintenance of the behaviour. Different factors may be important in relation to predicting and promoting initiation, maintenance and completion of health behaviours. The need for a greater focus on maintenance of health behaviours is something we have drawn attention in relation to a previous editorial for a special issue on health behaviours (Conner & Norman, 2017). Kwasnicka et al.'s (2016) review of over 100 theories of behaviour change maintenance highlighted the differential nature and impact of motives, self-regulation, resources (psychological and physical), habits, and environmental and social influences in the initiation and maintenance of health behaviour. Work on the development of good health behaviour habits may be one useful

direction for such research (Wood & Neal, 2016). We would suggest that the maintenance of engagement with many health behaviours also relies on having and maintaining positive evaluations of these behaviours. This is based on the idea that we are only likely to continue performing health behaviours over time that we continue to hold positive evaluations towards. Various studies show that intentions that are stable over time are more predictive of engaging in behaviours like physical activity (Sheeran & Abraham, 2003). Other studies have shown that long-term engagement in behaviours like healthy eating is predicted by having positive intentions and attitudes towards these behaviours but also on those intentions and attitudes remaining stable over time (Conner, Norman & Bell, 2002; Conner & Norman, 2021). Norman, Wilding and Conner (2022) showed similar temporal stability effects for intentions, descriptive norms and capability in relation to engaging with COVID-19 protection behaviours. Further correlational and experimental tests of the various factors that promote maintenance of engagement with health behaviours are needed to add to our understanding of the maintenance of different health behaviours.

Conclusions

We consider the study of health behaviours to represent an important area of health psychology with the potential to make an important contribution to efforts to improving health (Conner & Norman, 2017, 2019). Detailed understanding of individual health behaviours, such as those included in this and previous special issues (see Table 1), provides important insights related to common and unique determinants as well as effective ways to change these behaviours. Nevertheless, such work also illustrates the complexity of such behaviours and the necessary sophistication of models to understand and change these behaviours. Key directions for future work on health behaviours including understanding how people choose between different means to achieve the same health outcome and between health behaviours with different health outcomes, the interplay between higher and lower level influences on health behaviour, and how people are best able to maintain health behaviours over time.

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Table 1. Health behaviours covered in three special issues of Psychology & Health.

Health behaviour	Authors
<u>Health Protection Behaviours</u>	
Healthy diet	de Ridder et al. (2017)
Physical activity	Rhodes et al. (2017)
Sun protective behaviour	Julian et al. (2023)
<u>Health Risk Behaviours</u>	
Binge drinking	Kuntsche et al. (2017)
Smoking	West (2017)
Opioid use and misuse	Bolshakova et al. (2019)
Sexual behaviours	de Wit et al. (2023)
Medication non-adherence	Horne et al. (2023)
<u>Health Detection Behaviours</u>	
Cancer screening	Sarma et al. (2019)
<u>Other Health Behaviours</u>	
Blood and organ donation	Ferguson et al. (2019)
Health professional behaviour	Patey et al. (2023)