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A change in behaviour — getting the balance right for research and policy

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1 A change in behaviour — getting the 2 balance right for research and policy

3

4 Introduction

5 Behaviour is a major determinant of health [1]. It can have a profound effect on a
6 vast and diverse range of activities, such as the prevention of disease, the
7 implementation of evidence-based practice and self-management of chronic
8 illness [2]. A case in point is the use of medicines, which is greatly influenced by
9 behaviour. Medicines' adherence — the extent to which a person's medication-
10 taking behaviour corresponds with agreed recommendations from a healthcare
11 provider [3–5] — will often determine how well people respond to treatment.
12 Similarly, the application of evidence and the implementation of new clinical
13 guidelines rely heavily on healthcare professionals changing their behaviour to
14 keep up-to-date with changes to practice. Effective interventions to change
15 behaviour are therefore fundamental to the provision of evidence-based
16 healthcare.

17

18 This article discusses two frameworks for developing behaviour change
19 interventions [MINDSPACE and the Theoretical Domains Framework (TDF)] that
20 have relevance to healthcare. Whereas both approaches offer a means of
21 identifying what to target when seeking to change behaviour, one has found
22 favour with the [United Kingdom \(UK\)](#) Government, while the other is being
23 investigated internationally by a growing number of researchers in academia.

24

25 Those working in clinical pharmacy may encounter behaviour change
26 interventions that have used the MINDSPACE and TDF frameworks in their daily
27 practice — be it in the delivery or development of new services or as the focus of
28 interventions to improve patient care. This article serves to inform pharmacy
29 practitioners about the potential strengths and weaknesses of using either
30 framework in a clinical pharmacy context.

31 **A policy-driven approach to behaviour change**

32 Frameworks are often used to organise or label common themes drawn from
33 qualitative data, or as templates for [how to approach](#) approaching certain tasks.
34
35 ‘MINDSPACE’ is a framework used by a UK-Government-affiliated organisation
36 — The Behavioural Insights Team (BIT) — as a template for its approach to
37 designing interventions that intend to change behaviour. The origins, purpose
38 and an example of where the MINDSPACE framework has been used can be
39 found in Table 1. Briefly, MINDSPACE is a mnemonic for nine elements that are
40 thought to influence behaviour. When designing policies to change behaviour,
41 the framework’s authors encourage policymakers to consider which, if any, of
42 the nine MINDSPACE elements could be used to promote a preferred behaviour
43 or discourage an unwanted behaviour [6]. It has been proposed that it has
44 particular relevance and applicability to health policy — for example, in
45 preventing obesity or stopping smoking [6] — and has been used in an
46 intervention to influence prescriber behaviour (see Table 1) [7].

47 **The evidence for MINDSPACE**

48 There is strong support amongst behavioural scientists that behaviour change
49 interventions should have a theoretical grounding [1–2]. The MINDSPACE

framework is largely associated with a concept called nudging, which is based on a theory that behaviour is largely automatic and can be influenced by the context in which decisions are made. A nudge is defined as “any aspect of choice architecture [the purposeful organisation of the environment in which decisions are made] that alters people’s behaviour in a predictable way without forbidding any options or significantly changing their economic incentives” [8]. Although there is no single theory or model of behaviour that underpins nudging, the concept stems from established ideas from psychology [9].

These ideas are described using the dual-system models of behaviour, which propose that observed behaviour is the result of the interplay between two intrinsic decision-making systems: a reflective system and an automatic system. The reflective system follows a rational model of behaviour that is driven by experience, values and intentions [9, 10]. But making decisions in this way requires a certain degree of “thinking space” [10] and is believed to be limited, or bounded, by the cognitive ability of the individual [9]. In contrast, the automatic system makes decisions using little or no conscious thought and is predominantly influenced by factors external to the individual [10], such as the environment around them.

The MINDSPACE framework is the result of what its authors describe as “an integrative review, not a systematic review” [11] of the literature on what influences behaviour — with emergent themes brought together in a memorable format [11]. According to the Institute for Government discussion paper ‘MINDSPACE: Influencing behaviour through public policy’, the framework

deliberately focuses on context-based drivers of behaviour because relatively few policies had used this approach, the effectiveness of targeting reflective processes was questionable, and it seemingly offered better value for money [6].

The authors of MINDSPACE use examples of psychological theories, and existing policies and interventions to explain how each element in the mnemonic has the potential to change behaviour [12]. For instance, to explain how an appropriate ‘Messenger’ can influence behaviour, the authors discuss a health initiative in Zimbabwe that aimed to reduce the transmission of HIV by training hairdressers (the ‘Messenger’) to advise women about how to use female condoms [6, 12].

Critics of nudge warn that the MINDSPACE framework overlooks the reflective system of behaviour and other potential drivers of behaviour change, and thereby restricts the range of intervention functions available [13]. The BIT acknowledges that the framework is not comprehensive [6], but there is a lack of clarity as to how and why some of the elements that influence behaviour were included and others were not.

Ease of use versus evidence generated

A unique feature of the MINDSPACE framework, that the BIT is keen to emphasise, is that it presents an easy and low-cost method of applying behavioural science to policymaking that should lead to more effective services [6]. Indeed, the terminology used to describe MINDSPACE appears to contribute to this description. In some instances, it is referred to as a checklist or toolkit [6, 11] rather than a framework — implying that it is quick and easy to use — and does not require specialist (i.e., costly) input from external agencies. Yet, there

are few examples that describe explicit use of the MINDSPACE framework to aid the design of behaviour change interventions within healthcare.

Advances in behaviour change research

An alternative framework to MINDSPACE is the TDF (see Table 2), which organises a number of psychological constructs that are most relevant to behaviour change into distinct domains [2, 16]. In contrast to MINDSPACE it encompasses both the reflective and automatic systems of behaviour. It was developed through a consensus approach involving experts from a range of disciplines [2, 16], and is increasingly being investigated by intervention designers who are predominantly, but not exclusively, conducting research from an academic base. The TDF was developed to help policy makers, practitioners and researchers outside the discipline of psychology understand the factors (either barriers or facilitators) that might influence a change in behaviour [2, 16]. It may be used prospectively to guide intervention design or retrospectively to aid evaluation of existing interventions [17], and has been used in the design of health interventions— particularly those aimed at improving the implementation of evidence-based practice (see Table 2).

A recent Australian study by Phillips et al. highlighted potential limitations to the feasibility of using the TDF in clinical practice projects. The TDF approach calls for qualitative analysis of the target population's views and experiences, which is most commonly gathered during interviews and focus groups. Interviewing participants, transcribing sessions and analysing findings can take considerable time and are resource-intensive [17].

Policy approach versus an academic approach

The MINDSPACE framework, on face value, offers a straightforward and timely method of shaping policy decisions and designing behaviour change interventions according to what is known about human behaviour. The nudging approach, on which MINDSPACE is based, disregards cognitive processes of decision-making and may exclude other potential drivers of behaviour change. Moreover, too little is known about how the framework was developed.

In contrast, the origin of the TDF is clear: it has been systematically developed, agreed and validated by experts in behaviour change research and was designed based on what is known to be effective in behaviour change. Yet using the TDF requires considerable time and is resource-intensive, which is often not feasible in policy or practice settings, and depends upon on the availability and allocation of funding in academia.

Neither of the two approaches to behaviour change described has produced convincing evidence of efficacy [7,14]. Only time and continued investment will tell if one, or indeed both, approaches can produce sustained behaviour change and improve population health. There is clearly a tension between the need for evidence-based interventions that have been rigorously developed and evaluated over a number of years, versus the imperative to implement a policy that appears attractive and efficient, but is lacking a sound evidence base.

147 **Conclusion**

148 Clinical pharmacists should be aware of the limitations in the methodologies of
149 using the MINDSPACE and TDF frameworks and understand the benefits for
150 using either approach are not yet fully established. We propose that high-level
151 leaders from policy, practice and academia work together to ensure timely
152 development of acceptable behaviour change interventions that are grounded in
153 evidence. Exploring the different approaches taken, their relative strengths and
154 weaknesses and modes of application will facilitate mutual understanding.
155 Efforts should be made to disseminate this internationally to those working at
156 the forefront of patient care. A united approach to behaviour change has the
157 potential to produce a healthier population and revolutionise healthcare policy
158 in the future.

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Framework	Origin and purpose	Details	Example
MINDSPACE	Developed by a team within the United Kingdom Government. MINDSPACE is intended to be used by policymakers to incorporate “nudging” into policies that aim to change behaviour [6].	<p>MINDSPACE is a mnemonic for:</p> <ul style="list-style-type: none"> • Messenger • Incentives • Norms • Defaults • Salience • Priming • Affect • Commitment • Ego 	King et al. [7] used the framework to guide the design of a drug chart to provide nudges to influence prescribers’ behaviour [7]. The MINDSPACE framework was used to introduce certain interventions or “nudges” into the new chart — these being the effects associated with ‘defaults’ (preset options), ‘salience’ (the tendency to respond to what is different or relevant), ‘priming’ (the use of cues) and ‘commitment’ (declaring something as complete or correct, e.g., use of a checklist) [7]. For example, a correctly written prescription for an antibiotic is displayed on the drug chart providing a visible cue to

	prescribers — i.e., ‘priming’ them to write a prescription correctly.
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Tables

Table 1: The MINDSPACE framework

Table 2: The Theoretical Domains Framework

Framework	Origin and purpose	Details	Example
Theoretical domains framework (TDF)	A framework developed by a group of health psychologists, psychological theorist and health service researchers as a method of interpreting health behaviour. [2] [16]	<p>Organises 84 constructs of behaviour into 14 domains:</p> <ul style="list-style-type: none"> • Knowledge • Skills • Social/professional role/identity • Beliefs about capabilities • Optimism • Beliefs about consequences • Reinforcement • Intentions • Goals • Memory • Environmental context and resources • Social influences • Emotion • Behavioural regulation 	French et al [14, 15] used the TDF in the design of an intervention to the management of acute low back pain in a primary care setting in Australia [14]. Focus groups with general practitioners (GPs) were conducted to determine barriers and enablers to implementing evidence-based guidelines for the management of acute low back pain. These factors were linked to the TDF domains: Knowledge; Skills, Beliefs about consequences; Beliefs about capabilities, Memory; Environmental context and resources; and Social influences [15]. Researchers then used a matrix that mapped intervention components to the TDF to build the intervention [15].