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

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Introduction

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

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

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

33 Frameworks are often used to organise or label common themes drawn from

34 qualitative data, or as templates for ~~how to approach~~approaching certain tasks.

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

50   framework is largely associated with a concept called nudging, which is based on

51   a theory that behaviour is largely automatic and can be influenced by the context

52   in which decisions are made. A nudge is defined as "any aspect of choice

53   architecture [the purposeful organisation of the environment in which decisions

54   are made] that alters people's behaviour in a predictable way without forbidding

55   any options or significantly changing their economic incentives" [8]. Although

56   there is no single theory or model of behaviour that underpins nudging, the

57   concept stems from established ideas from psychology [9].

58

59   These ideas are described using the dual-system models of behaviour, which

60   propose that observed behaviour is the result of the interplay between two

61   intrinsic decision-making systems: a reflective system and an automatic system.

62   The reflective system follows a rational model of behaviour that is driven by

63   experience, values and intentions [9, 10]. But making decisions in this way

64   requires a certain degree of "thinking space" [10] and is believed to be limited, or

65   bounded, by the cognitive ability of the individual [9]. In contrast, the automatic

66   system makes decisions using little or no conscious thought and is

67   predominantly influenced by factors external to the individual [10], such as the

68   environment around them.

69

70   The MINDSPACE framework is the result of what its authors describe as "an

71   integrative review, not a systematic review" [11] of the literature on what

72   influences behaviour — with emergent themes brought together in a memorable

73   format [11]. According to the Institute for Government discussion paper

74   'MINDSPACE: Influencing behaviour through public policy', the framework

75   deliberately focuses on context-based drivers of behaviour because relatively

76   few policies had used this approach, the effectiveness of targeting reflective

77   processes was questionable, and it seemingly offered better value for money [6].

78

79   The authors of MINDSPACE use examples of psychological theories, and existing

80   policies and interventions to explain how each element in the mnemonic has the

81   potential to change behaviour [12]. For instance, to explain how an appropriate

82   'Messenger' can influence behaviour, the authors discuss a health initiative in

83   Zimbabwe that aimed to reduce the transmission of HIV by training hairdressers

84   (the 'Messenger') to advise women about how to use female condoms [6, 12].

85

86   Critics of nudge warn that the MINDSPACE framework overlooks the reflective

87   system of behaviour and other potential drivers of behaviour change, and

88   thereby restricts the range of intervention functions available [13]. The BIT

89   acknowledges that the framework is not comprehensive [6], but there is a lack of

90   clarity as to how and why some of the elements that influence behaviour were

91   included and others were not.

92   **Ease of use versus evidence generated**
93   A unique feature of the MINDSPACE framework, that the BIT is keen to

94   emphasise, is that it presents an easy and low-cost method of applying

95   behavioural science to policymaking that should lead to more effective services

96   [6]. Indeed, the terminology used to describe MINDSPACE appears to contribute

97   to this description. In some instances, it is referred to as a checklist or toolkit [6,

98   11] rather than a framework — implying that it is quick and easy to use — and

99   does not require specialist (i.e., costly) input from external agencies. Yet, there

100   are few examples that describe explicit use of the MINDSPACE framework to aid

101   the design of behaviour change interventions within healthcare.

102   **Advances in behaviour change research**

103   An alternative framework to MINDSPACE is the TDF (see Table 2), which

104   organises a number of psychological constructs that are most relevant to

105   behaviour change into distinct domains [2, 16]. In contrast to MINDSPACE it

106   encompasses both the reflective and automatic systems of behaviour. It was

107   developed through a consensus approach involving experts from a range of

108   disciplines [2, 16], and is increasingly being investigated by intervention

109   designers who are predominantly, but not exclusively, conducting research from

110   an academic base. The TDF was developed to help policy makers, practitioners

111   and researchers outside the discipline of psychology understand the factors

112   (either barriers or facilitators) that might influence a change in behaviour [2,

113   16]. It may be used prospectively to guide intervention design or retrospectively

114   to aid evaluation of existing interventions [17], and has been used in the design

115   of health interventions— particularly those aimed at improving the

116   implementation of evidence-based practice (see Table 2).

117

118   A recent Australian study by Phillips et al. highlighted potential limitations to the

119   feasibility of using the TDF in clinical practice projects. The TDF approach calls

120   for qualitative analysis of the target population's views and experiences, which is

121   most commonly gathered during interviews and focus groups. Interviewing

122   participants, transcribing sessions and analysing findings can take considerable

123   time and are resource-intensive [17].

124 **Policy approach versus an academic approach**

125 The MINDSPACE framework, on face value, offers a straightforward and timely

126 method of shaping policy decisions and designing behaviour change

127 interventions according to what is known about human behaviour. The nudging

128 approach, on which MINDSPACE is based, disregards cognitive processes of

129 decision-making and may exclude other potential drivers of behaviour change.

130 Moreover, too little is known about how the framework was developed.

131

132 In contrast, the origin of the TDF is clear: it has been systematically developed,

133 agreed and validated by experts in behaviour change research and was designed

134 based on what is known to be effective in behaviour change. Yet using the TDF

135 requires considerable time and is resource-intensive, which is often not feasible

136 in policy or practice settings, and depends upon on the availability and allocation

137 of funding in academia.

138

139 Neither of the two approaches to behaviour change described has produced

140 convincing evidence of efficacy [7,14]. Only time and continued investment will

141 tell if one, or indeed both, approaches can produce sustained behaviour change

142 and improve population health. There is clearly a tension between the need for

143 evidence-based interventions that have been rigorously developed and

144 evaluated over a number of years, versus the imperative to implement a policy

145 that appears attractive and efficient, but is lacking a sound evidence base.

146

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.

159

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230

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].	MINDSPACE is a mnemonic for: • **M**essenger • **I**ncentives • **N**orms • **D**efaults • **S**alience • **P**riming • **A**ffect • **C**ommitment • **E**go	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.

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]	Organises 84 constructs of behaviour into 14 domains: • 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].