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1 **Beyond the ‘teachable moment’ – a conceptual analysis of women’s perinatal behavior**
2 **change**

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4 Running head: Perinatal behavior change

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39 Beyond the ‘teachable moment’ – a conceptual analysis of women’s perinatal
40 behaviour change

41

42 Abstract

43 Background

44 Midwives are increasingly expected to promote healthy behaviour to women and
45 pregnancy is often regarded as a ‘teachable moment’ for health behaviour change.

46 This view focuses on motivational aspects, when a richer analysis of behaviour
47 change may be achieved by viewing the perinatal period through the lens of the
48 Capability-Opportunity-Motivation Behaviour framework. This framework proposes
49 that behaviour has three necessary determinants: capability, opportunity, and
50 motivation.

51

52 Aim

53 To outline a broader analysis of perinatal behaviour change than is afforded by the
54 existing conceptualisation of the ‘teachable moment’ by using the Capability-
55 Opportunity-Motivation Behaviour framework.

56

57 Findings

58 Research suggests that the perinatal period can be viewed as a time in which
59 capability, opportunity or motivation naturally change such that unhealthy behaviours
60 are disrupted, and healthy behaviours may be adopted. Moving away from a sole
61 focus on motivation, an analysis utilising the Capability-Opportunity-Motivation
62 Behaviour framework suggests that changes in capability and opportunity may also
63 offer opportune points for intervention, and that lack of capability or opportunity may

act as barriers to behaviour change that might be expected based solely on changes in motivation. Moreover, the period spanning pregnancy and the postpartum could be seen as a series of *opportune intervention moments*, that is, personally meaningful episodes initiated by changes in capability, opportunity or motivation.

Discussion

This analysis offers new avenues for research and practice, including identifying discrete events that may trigger shifts in capability, opportunity or motivation, and whether and how interventions might promote initiation and maintenance of perinatal health behaviours.

Keywords: behaviour change, health behaviour, psychological theory, postnatal period, COM-B framework

78

Summary of Relevance

79 Problem or issue

80 Midwives are expected to promote healthy behaviours to women.

81

82 What is already known

83 Pregnancy is viewed as a 'teachable moment' for behaviour change but this definition

84 relies mainly on motivation. A broader view is offered by the COM-B framework,

85 which proposes that behaviour (B) has three necessary determinants: capability (C),

86 opportunity (O) and motivation (M).

87

88 What this paper adds

89 Imposing the COM-B framework to perinatal behaviour change moves understanding

90 beyond motivation alone. Specifically, it draws attention to possibilities that

91 capability and opportunity changes may offer opportune intervention points, and

92 capability or opportunity barriers may preclude behaviour change that might be

93 expected based on motivational shifts.

94 The expectation on midwives and other maternity care staff to encourage health
95 behaviours and discourage unhealthy behaviours in pregnant and postpartum women
96 is increasing.^{1, 2} This expectation stems from the recognition that midwives are a
97 trusted source of information for most women,³ have regular contact with women and
98 interact with them during a life stage where women may be more receptive to health
99 messages.⁴ Thus, midwives and other healthcare professionals are considered to be in
100 a unique position to promote health behaviours, including smoking cessation,⁵ healthy
101 eating⁶ and pregnancy-specific behaviours (e.g. breastfeeding⁷), as is currently
102 recommended in numerous maternity care guidelines in Australia⁸ and
103 internationally.⁹

104

105 Related to health promotion is the idea that pregnancy may offer ‘teachable moments’
106 for health behaviour change.¹⁰ In this paper, we respond to recent calls to use more
107 theory in maternal health research¹¹ and previous research suggesting that teachable
108 moments have been under-theorised,¹² to present an alternative conceptualisation of
109 the ‘teachable moment’. We describe the current conceptualisation of the ‘teachable
110 moment’ and subsequently draw on recent developments in behavioural science to
111 outline a broader analysis of behaviour change during pregnancy and after birth
112 utilising the recently developed Capability-Opportunity-Motivation Behaviour
113 (COM-B) framework.¹³ This framework identifies three fundamental determinants of
114 behaviour (capability, opportunity, and motivation), into which all facilitators of or
115 barriers to behaviour can be organised. Applying the framework to perinatal
116 behaviour generates new possibilities for understanding naturally occurring changes
117 that may affect behaviour and behaviour change, beyond the motivation-focused
118 ‘teachable moment’ account that dominates the field at present. We provide examples

of how the COM-B framework may be applied to perinatal behaviour change and how it may help practitioners and researchers alike to consider women's behaviour change. Lastly, we outline some moments during and after pregnancy that may be particularly opportune for intervention, and suggest new avenues for research and practice.

Pregnancy as a 'teachable moment'

Phelan in 2010 suggested that pregnancy offers 'teachable moments' for health behaviour change such as those related to weight control (physical activity and healthy eating).¹⁰ Since then, several authors have agreed that women may be highly receptive to health behaviour change interventions during pregnancy.^{4, 14} Phelan's suggestion of pregnancy offering 'teachable moments' is based upon McBride et al's theory, which states that three constructs determine whether a life or health event acts as a teachable moment: an increase in perception of personal risk and outcome expectancies; prompting of strong affective responses; and a redefinition of self-concept and social roles.¹⁵ Phelan concluded that 'intervening during pregnancy may capitalise on this natural period of redefinition that occurs among women' (p135.e4),¹⁰ making it an ideal time to encourage women to be healthy.

In this opinion paper we further develop Phelan's (2010) idea that multiple events occur during pregnancy and the postpartum period, by arguing that these may bring changes not only to women's motivations, but also to their capabilities and opportunities for behaviour change. Identifying events during and after pregnancy that may trigger changes to motivation, capability or opportunity may reveal a greater range of both possibilities and potential pitfalls in health behaviour change promotion.

This analysis encompasses and expands beyond the ‘teachable moment’ as currently conceived, and is applicable to all health behaviours, not solely those related to weight control.

A COM-B analysis of behaviour change

The COM-B framework was introduced in 2011 as a framework for understanding behaviour and its determinants.¹³ It was designed to provide a parsimonious, yet comprehensive and logically coherent model to inform the design of new behaviour change interventions, and characterisation of existing interventions. It was developed through a systematic synthesis of 19 existing frameworks of behaviour change interventions, none of which in isolation provide a comprehensive or coherent analysis of behaviour.

The COM-B framework (see figure 1) proposes that behaviour (B) has three necessary determinants: capability (C), opportunity (O), and motivation (M).¹³ Each of these may be deconstructed further: physical and psychological capability (the latter referring to the capacity to engage in necessary thought processes, e.g. summoning the willpower to act); physical and social opportunity (respectively referring to affordances within the physical and social environment for action), and, reflective and non-reflective motivation (respectively referring to conscious and unconscious [e.g. emotion-based] motivation). (See table 1 for illustrative examples of these constructs, as applied to physical activity in pregnancy.) By implication, any change in behaviour must arise from a shift in capability, opportunity, or motivation, or any combination thereof. For example, women may stop smoking when they

become pregnant due to the awareness of the health risks to themselves and their baby (reduced reflective motivation for smoking) or social disapproval (diminished social opportunity).¹⁶

The utility of the COM-B framework lies in its capacity to inform a comprehensive ‘behavioural diagnosis’.¹⁷ Just as a physician must examine a patient in order to understand the cause or causes of their symptoms and subsequently recommend appropriate treatments, so must behaviour change experts firstly understand why an individual, group, or population is engaging in an unhealthy action (or not engaging in a healthy action) before developing appropriate behavioural interventions for use by healthcare professionals. The COM-B framework is designed to encompass all potential determinants of behaviour, and classifies these into three overarching categories (capability, opportunity, and motivation). Using the framework represents the first step in the broader ‘Behaviour Change Wheel’ approach to developing interventions; the COM-B behavioural diagnosis informs the identification of appropriate functions by which interventions may generate behaviour change (e.g. to educate, to train, to persuade), and selection of behaviour change techniques likely to deliver those functions.^{13, 17} Outside of perinatal health, COM-B has been successfully applied to explain or change a range of health behaviours including tobacco use,¹³ health practitioners’ adherence to disease prevention guidelines,¹⁸ and improving care in acute hospital settings.¹⁹

In this paper, we propose that the COM-B framework offers a richer analysis of the potential determinants of changes in health behaviour in pregnancy, and avenues for intervention, than does the dominant perspective, based on the ‘teachable moment’.¹⁰

The ‘teachable moment’ perspective suggests that women are more receptive to health information (i.e. more ‘teachable’) during pregnancy, due to naturally occurring changes in their motivation.¹⁰ From a COM-B perspective, Phelan’s ‘teachable moment’ relates mostly to shifts in reflective and non-reflective motivation that arise during pregnancy, as women start to adjust to a newfound social and emotional role and new health risks (reflective motivation), and experience strong emotional responses to such risks (non-reflective motivation).¹⁰ A COM-B analysis of behaviour in pregnancy, however, extends beyond the notion of naturally occurring motivational change, by emphasising that behaviour may also change due to natural shifts in capability or opportunity during pregnancy. For example, in the second trimester, some women report an increase in energy (increased physical capability)²⁰, which, so long as there is also sufficient opportunity for activity (e.g. access to facilities), may promote acting on the motivation to be physically active. Conversely, women who are physically active pre-pregnancy often report decreasing their activity levels due to physical ailments associated with pregnancy such as pelvic girdle pain or breathlessness (decreased physical capability), and a lack of appropriate exercise classes (decreased physical and social opportunities), despite feeling motivated to keep active in pregnancy.²⁰ Focusing only on pregnancy-related events involving changes in motivation may neglect potentially fruitful behaviour change possibilities, and potentially powerful barriers to behaviour change, that arise from changes in opportunities and capabilities.

Recognising natural shifts in capability, opportunity and motivation is of theoretical and practical importance. A COM-B lens generates explanations for why health campaigns that seek to capitalise on naturally occurring motivation shifts may fail.

Even if pregnancy is a ‘teachable moment’ because of motivation shifts, health promoters attempting to seize this ‘moment’ may face difficulties in facilitating behaviour change if women do not have sufficient capability, or fail to recognise or respond to opportunities to act. For example, despite wanting to quit,²¹ many pregnant smokers fail to stop smoking during pregnancy, due to addiction, life circumstances or stress.¹⁶ This is perhaps unsurprising; a recent COM-B-based mapping exercise identified a variety of barriers to smoking cessation in pregnancy, including lack of knowledge and low self-efficacy (psychological capability), nicotine dependence and lack of intervention (physical capability), smoking triggers and lack of role models (automatic motivation), contrasting health messages and feeling coerced (reflective motivation), lack of social support (social opportunity) and lack of health services (physical opportunity).²² Stop smoking services, and public health services more broadly, must therefore consider not only pregnant women’s motivation to take health action, but their capabilities and opportunities.

Our perspective is novel, in that pregnancy, and the events that occur within pregnancy, have not previously been conceptualized using the COM-B framework. To date, the studies of specific pregnancy-related behaviours undertaken from a COM-B perspective have considered pregnancy and the postpartum as one event, compared to examining specific events such as first visit to midwife or feeling foetal movements for the first time (see table 2 for more examples of potential opportune events). That said, the research examining specific pregnancy-related behaviours using a COM-B perspective testify to its comprehensiveness, and utility for informing healthcare practice. One study reported interviews with women with a diagnosis of borderline gestational diabetes mellitus.²³ Capability, opportunity and motivation

were found to incorporate the reported barriers and facilitators to achieving interviewees' healthy lifestyle goals. The authors recommended that care for women with mild pregnancy hyperglycemia should be tailored according to identified capability, opportunity, and/or motivation barriers.²³ Elsewhere, a review of qualitative research of women's experiences with pelvic floor muscle training found that previous findings in this area could be mapped on to the COM-B constructs, and that this COM-B analysis identified novel and potentially fruitful targets for improving training adherence.²⁴ In sum, the available research demonstrates the value of using the COM-B framework to identify factors that influence behavior and behaviour change, in a manner likely to assist midwives and other healthcare professionals working with pregnant and postpartum women.

Opportune intervention moments during and after pregnancy

'Teachable moments' are currently defined by changes in motivation that lead to spontaneous adoption of risk-reducing health behaviours, and so may represent opportune moments for intervention.¹⁰ From a COM-B perspective, a perceived lack of capability or opportunity may reduce receptiveness to health advice as behaviour is not seen as changeable. Alternatively, the reverse may be true; abundance in capability and opportunity may increase motivation. Consequently, changes in capability and opportunity can also influence openness to health promotion messages, or willingness to act on them.

Therefore, there may be multiple opportune intervention moments in pregnancy; and conversely, moments which are less suited to intervention. Throughout pregnancy and

postpartum, a series of personally significant events and transitions take place for women that impact on capability, opportunity and motivation. Some such events may be clearly demarcated, such as the moment the pregnancy is discovered, which can trigger smoking cessation attempts and a reduction in alcohol intake due to changes in motivation.^{16, 25} Other events can be separated by pregnancy trimesters. For example, as noted above, boosts in energy in the second trimester may facilitate physical activity via increased capability²⁰, whereas in the third trimester restricted mobility due to changes to weight and body shape may diminish physical capability for physical activity.²⁶

It may also be important to distinguish between pregnancy and postpartum periods as prioritisation of caring for the baby in the postpartum period may make women feel psychologically and physically incapable of engaging with, or limit social opportunities for healthy behaviours (e.g., physical activity²⁶). Postpartum may also provide several opportune intervention moments in itself, with the realization of parenthood bringing a different ‘context’, accompanied by new capabilities, opportunities and motivation. Following birth, the loss of the physical connection between the child’s and mother’s bodies may affect the perceived health consequences of the woman’s behaviours, often reversing in-pregnancy motivation to decrease smoking¹⁶ or alcohol consumption.²⁷ The demands of feeding and basic care, accompanied by significant changes to sleep patterns can reduce both physical and psychological capability for a number of behaviours such as physical activity and healthy eating. However, opportunity may also increase, due to support from family members and access to health-relevant programs or services for mothers of young babies, such as stroller/buggy fitness classes.²⁸

294

295

296 *New avenues for research and practice*

297 Utilising the COM-B framework allows researchers to systematically map triggers to
298 capability, opportunity and/or motivation shifts during pregnancy and postpartum.²²

299 We suggest that practitioners and intervention developers may benefit from using
300 COM-B to help understand behaviour(s) of interest, while also being cognisant of the
301 significance of the individual's psychological adaptation (primarily in terms of
302 motivation) and their *perceived* capability, opportunity and motivation. Using these
303 approaches will highlight more fully the many possibilities for behaviour change
304 provided by pregnancy and the postpartum period than were suggested by the
305 previous conceptualisation of the 'teachable moment'. Applying the COM-B
306 framework also allows midwives to provide woman-centred care, by considering the
307 woman's individual capabilities, opportunities and motivation. Thus, the model could
308 be used favourably in training those midwives, who report a lack of confidence in
309 supporting women regarding behaviour change.²⁹

310

311 Longitudinal research is needed to identify how capability, opportunity and
312 motivation change throughout pregnancy and postpartum and to what extent, so as to
313 pinpoint the most opportune moments for purposive health behaviour change
314 promotion. An important strength of the COM-B framework is that it provides
315 suggestions for appropriate types of health behaviour change interventions.¹⁷

316 Identifying opportune moments and utilising tailored interventions will aid midwives
317 and other healthcare professionals when they support women to change their
318 behaviour. Further work might also examine whether it is possible to develop healthy

habits early in pregnancy or even pre-conception so as to shield healthy behaviours against disruptions owing to changes in capability, opportunity, or motivation.³⁰ Finally, a sole focus on women and not their partners and/or family may ignore the influence that these significant others may have on the COM-B determinants of behaviour.

Conclusion

The commonly held view that pregnancy is a ‘teachable moment’ may be broadened beyond motivation. The COM-B framework can be used to identify naturally occurring changes in capability, opportunity and motivation that may be conducive to changing any health-related behaviour during or after pregnancy. Further research is needed on how to best capitalise on these changes for positive behaviour change that may be facilitated by midwives and other maternity care staff.

Conflict of interest

The authors report no conflict of interest.

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