



**PHYSICIANS AND PATIENTS:
HOW BEHAVIOURAL
SCIENCE HELPS US BETTER
UNDERSTAND AND
INFLUENCE BEHAVIOUR...**

...IN 6 SHORT ARTICLES

A BRIEF WORD

This publication contains six short articles recently written by Activate Research.

It aims to provide a window into the vast amounts of academic research in behavioural science which can help us better **understand** and **influence** physician and patient behaviour.

It first focuses on **physicians**, summarising three pharmaceutical industry related reasons why a psychology based approach is critical when trying to understand **prescribing**.

It next explains how physicians' unique personalities create a particular challenge as regards **new product uptake** – before detailing three specific **models** which can help us to better investigate and explain new product adoption challenges (for both physicians and patients).

The remaining three articles focus on **influencing** behaviour, with the first of these outlining three key psychological considerations for successful consumer health messaging.

Next are three common interventions to help boost patients' **belief** in their ability to make difficult health related behavioural changes – before finally, three proven ways to help ensure health related changes can be **maintained** over time are presented.

Thanks for reading. We hope you find the information in this publication useful.



Chris Harvey
Founder of Activate Research

THE ARTICLES

1. **Three** reasons why psychology is key to understanding prescribing
2. **Two** key personality barriers to new product uptake among physicians
3. **Three** models to help investigate new product adoption challenges
4. **Three** key psychological considerations for successful consumer health messaging
5. **Three** ways to improve patient self-efficacy
6. **Three** ways to maintain motivation following health related interventions

THREE REASONS WHY PSYCHOLOGY IS KEY TO UNDERSTANDING PRESCRIBING

Introduction

Physicians routinely make prescribing decisions for all kinds of sensible, considered, rational reasons.

However, the Nobel prize winner Richard Thaler suggested that all humans, to some degree or other, also incorporate psychologically driven **'supposedly irrelevant factors'** into their decision making¹.

Below are three reasons, specific to the pharmaceutical industry, why practitioners in – and commissioners of – physician prescribing research need to be especially aware of the existence of such factors.

If acknowledged and understood, psychology can play a critical role in not only helping us to understand the full picture of prescribing behaviour, but also to understand why physicians sometimes appear – at least on the face of it – to be making **'sub-optimal'** decisions.

1. HIGH COMPETITION

First, the B2B pharmaceutical marketplace is overwhelmingly crowded, with differentiation a challenge for all pharmaceutical organizations². Given this busy environment, it is likely not all physicians will be aware of, inclined to, or able to become highly knowledgeable about every possible product available. As a result, psychological factors may play an enhanced role in decision making, such as for example the **familiarity principle**³ – which can lead to an over-reliance on products with which physicians are already familiar.

1. Thaler, R. (2015). *Misbehaving: The Making of Behavioral Economics*. London: Allen Lane.

2. Retrieved from: <https://www.orientation.agency/insights/pharmaceutical-marketing-challenges>

3. Zajonc, R.B. (1968). Attitudinal effects of mere exposure. *Journal of Personality and Social Psychology*, 9, 1-27.

2. HIGH USAGE

Second, in the UK, the annual number of prescriptions dispensed increased by 65% from approximately 653 million in 1999¹ to 1,074 million in 2009². Even at 1999 levels of busyness (and certainly now), many physicians are likely to have relied to some extent on psychological influences such as **habits** or **heuristics** – designed to conserve mental headspace in a highly challenging environment. Psychological factors such as habits can also be valuable in helping to explain why physicians may not (often understandably) always appear to choose what observers judge to be the ‘optimum’ product.

3. HIGH INNOVATION

Finally, even before COVID-19, it is fair to say innovation levels were high in the pharmaceutical industry: a PwC report³ found that pharmaceutical companies spend a significantly higher proportion of revenues on innovation than the average company. However, even if new products do produce vastly superior patient outcomes, will this automatically translate into increased usage? In an environment with high innovation, it becomes especially important to understand psychological factors that drive or inhibit take-up – such as for example the level of **risk aversion** among physicians.

And finally...

In summary, the above is not intended to suggest that psychological factors will **always** dominate for every physician – or that any specific factors referred to above will always be influential.

However, given the three characteristics of the industry described here, an awareness of the importance of psychology is essential in any study seeking to understand physician prescribing.

1. Pearce D., & Goldblatt, P. (2000). *United Kingdom Health Statistics*.

2. Smith M., Sweet, D., & Holley, R. (2010). *United Kingdom Health Statistics*.

3. Retrieved from: <https://www.pwc.com/gx/en/pharma-life-sciences/assets/pwc-managing-innovation-pharma.pdf>



TWO KEY PERSONALITY BARRIERS TO NEW PRODUCT UPTAKE AMONG PHYSICIANS

Introduction

The pharmaceutical industry typically spends over 25% of its revenues each year on research and development¹.

However, despite the repeated emergence of new products, physicians often stick with **existing, sometimes inferior** treatments.

While factors including therapy area and patient characteristics may partially explain this behaviour, there is another, often overlooked factor that can help us to better understand and predict behaviour across the board: the **unique personality make-up** of physicians.

Recent studies have shown that physicians' personalities are **significantly different** from the general public².

In particular, the most extreme difference comes on the 'Conscientiousness' trait – where physicians score significantly higher.

Given those scoring highly on this trait are typically responsible, organised, hard-working, and goal-directed, this should overall be a good thing!

However, physicians' higher levels of conscientiousness may also be a **barrier to new product uptake** in two specific ways:

1. Retrieved from: https://www.cbo.gov/publication/57126#_idTextAnchor003

2. Stienen, M.N., Scholtes, F., Samuel, R., Weil, A., Weyerbrock, A., & Surbeck, W. (2018). Different but similar: personality traits of surgeons and internists - results of a cross-sectional study. *BMJ Open*, 8.

1. OVER-CAUTIOUSNESS

People at the higher end of the conscientiousness scale may be at risk of perfectionism¹. While this can lead to workaholism and burnout, it can also manifest itself in other ways. In particular, those high on conscientiousness are typically less likely to be flexible and spontaneous, often adopting a more **cautious** approach. This is likely to contribute to low uptake of new products.

2. OVER-CONFIDENCE

Those scoring highly on 'Conscientiousness' also have strong confidence in their ability to reach their goals and be successful². While a good dose of self-confidence can help physicians to feel effective, too much may be **dangerous**. If physicians are over-confident, it may lead to them unduly dismissing potentially valuable new products in favour of previously used, yet perhaps inferior products.

And finally...

While this article focuses solely on the high relative 'Conscientiousness' of physicians compared to the general population, research also shows two further interesting differences.

First, physicians are also both more **extroverted**, and less likely to **worry** than the general public – while surgeons' scores here in particular are significantly different, not only to the general public but also to physicians in general³.

1. Retrieved from: <https://www.psychologytoday.com/gb/basics/conscientiousness>

2. Retrieved from: <https://www.verywellmind.com/how-conscientiousness-affects-your-behavior-4843763>

3. Stienen, M.N., Scholtes, F., Samuel, R., Weil, A., Weyerbrock, A., & Surbeck, W. (2018). Different but similar: personality traits of surgeons and internists - results of a cross-sectional observational study. *BMJ Open*, 8.

THREE MODELS TO HELP INVESTIGATE NEW PRODUCT ADOPTION CHALLENGES

Introduction

As stated earlier (see p6) over 25% of revenues in the pharmaceutical industry are typically spent on research and development¹.

However, despite the repeated emergence of new products, physicians often stick with **existing, sometimes inferior** treatments.

A valuable approach when doing research into new product adoption challenges is to incorporate a **model** – where a model **represents** or **explains** the operation or mechanism of something.

Models can help us **develop** and **test** a range of hypotheses about behaviour, and in doing so to also minimise the risk of making incorrect assumptions.

Below are three useful models for helping to investigate and explain new product adoption challenges, which can be used to better understand patients as well as physicians:

1. COM-B MODEL

This first model² is not specific to understanding new product adoption challenges, however it can nevertheless be very useful. In summary, to do any particular behaviour, the COM-B model states that one needs three things: the **Capability**, **Opportunity**, and **Motivation**. Capability may be about having the requisite physical strength or stamina, although is more commonly associated with psychological knowledge or skills. Opportunity is about having a conducive physical and / or social environment. Finally, Motivation covers one's considered beliefs, but also the potential importance of automatic influences such as impulses and habits.

1. Retrieved from: https://www.cbo.gov/publication/57126#_idTextAnchor003

2. Michie, S., van Stralen, M., & West, W. (2011). The behaviour change wheel: A new method for characterising and designing behaviour change interventions. *Implementation Science*, 6, 42.

2. ADOPTION OF INNOVATIONS MODEL

In this second model¹, there are two pre-requisites for the successful adoption of new innovations. First, people need sufficient **knowledge** about the innovation. Once present, this then creates the conditions for the second necessity: **persuasion**. Importantly, the model also contains information on key factors which influence both of the above, and which can be tested through research. For example, persuasion is influenced by innovation factors such as its perceived complexity and trialability, as well as perceived advantages over current options.

3. TECHNOLOGY ACCEPTANCE MODEL

This final model² describes two key factors that influence the acceptance and usage specifically of technology: perceptions of **usefulness**, and of **ease of use**. As above, the model also contains important information on these factors which can help to inform primary research. First, perceived usefulness depends on the perceived relevance and quality of the technology, as well as perceptions of others' beliefs. Perceived ease of use depends on personal factors including the belief one is able to use the technology.

And finally...

The models above can be used to help inform and enhance the design, analysis, and reporting of primary research: **qualitative** or **quantitative**.

As well as providing deeper insights into current behaviours or barriers, these models can also, if desired, help us to recommend, generate, and test behavioural **interventions** to increase the chances of new products being adopted in the future.

1. Adapted from Rogers, E.M. (2003). Diffusion of Innovations (5th Ed.). New York: Free Press.

2. Adapted from: Davis, F.D. (1989). Perceived usefulness, perceived ease of use, and user acceptance of information technology. MIS Quarterly, 13, 319-340.

THREE KEY PSYCHOLOGICAL CONSIDERATIONS FOR SUCCESSFUL CONSUMER HEALTH MESSAGING

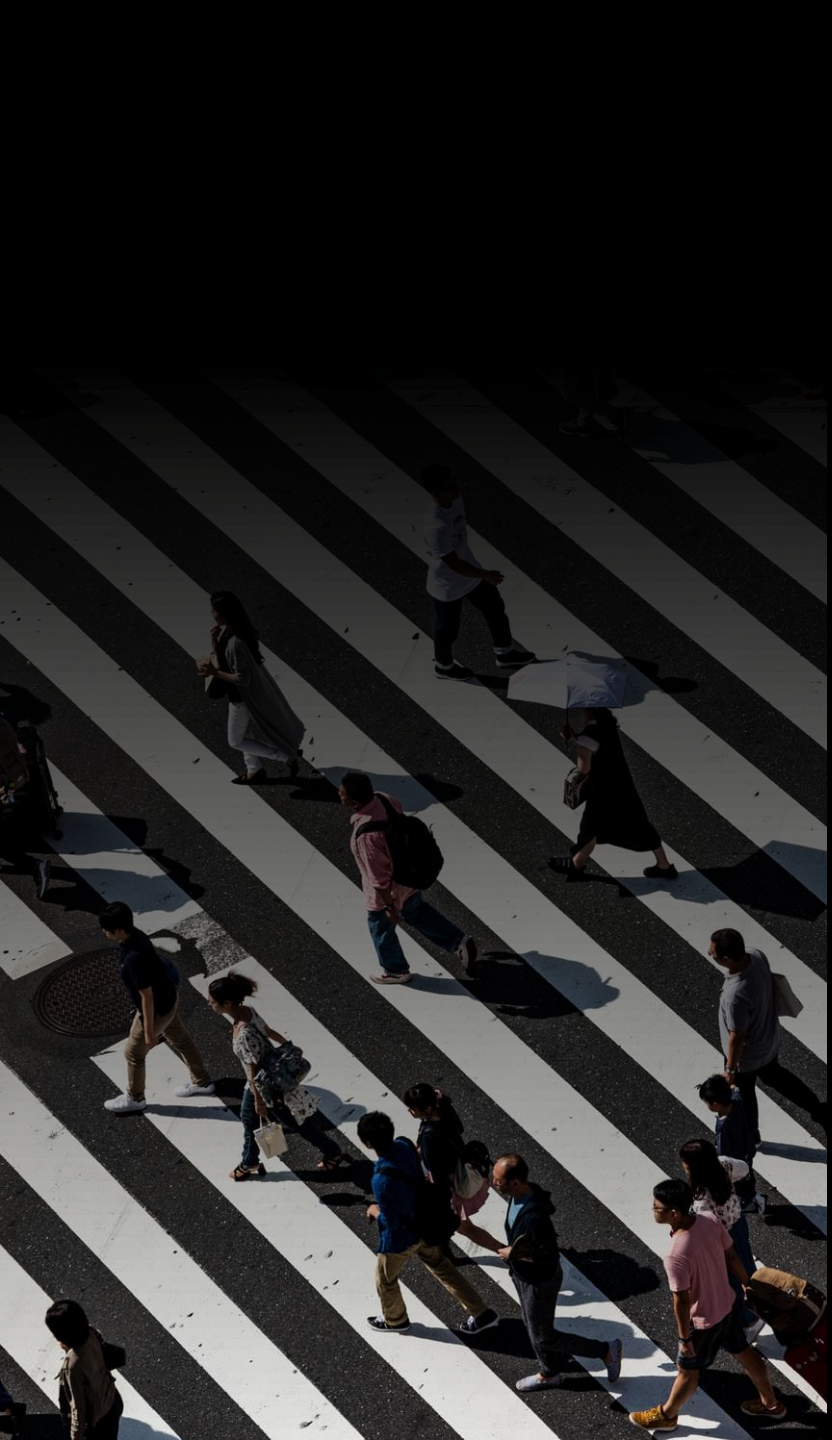
Introduction

From working across multiple sectors, Activate Research has found many consistencies in research insights aimed at helping to create effective consumer communications.

Similarly, in research specifically to inform **consumer health messaging**, three key psychological questions seem to regularly find their way into the final debrief for the client's consideration:

I. HEADSPACE

Will consumers have the **'headspace'** to take on board the message? The long-established psychological theory of Bounded Rationality¹ says that humans do not process all information in a completely optimal manner. This is most commonly caused by not having the necessary mental processing power, and so when dealing with often complex conditions and / or solutions in consumer health, we should always be seeking to ask 'Is our messaging framed in the simplest, clearest way possible?'



2. DELIBERATE IGNORANCE
Second, can we be sure a negative, or ‘scary’ message will be most effective? Not necessarily, according to the theory of deliberate ignorance¹, which says that – contrary to what we might believe – people often go out of their way to **avoid** negative or uncertain information about the future. While a negative outcome may occur as a result of consumers ignoring our messaging, this theory suggests that pointing this out may not always be the most effective way to engineer the health decision we desire.

3. MESSENGER
Finally, who is **delivering** the health related message? There is long-established evidence that the ‘messenger’ influences behaviour as much as the content of the message itself². Given that for example, people are more likely to act on information if medical experts deliver it², we should resist the temptation to focus exclusively on the content of the message itself, and give due consideration also to the ‘messenger’.

And finally...

Of course, in any scenario there will also be further important questions to consider, which can be uncovered through primary research.

However, the three above are always very worthy of consideration.

1. Gigerenzer, G. & Garcia-Retamero, R. (2017). Cassandra's Regret: The Psychology Of Not Wanting To Know. *Psychological Review*, 124, 179-196.
2. Dolan, P., Hallsworth, M., Halpern, D., King, D., Metcalfe, R., Vlaev, I. (2012). Influencing behaviour: the MINDSPACE way. *Journal of Economic Psychology*, 33, 264-277.

THREE WAYS TO IMPROVE PATIENT SELF- EFFICACY

Introduction

When trying to encourage patients to adopt a healthier lifestyle, it is taken as given that they will require information; for example, information on the benefits of stopping smoking – and perhaps some practical tips on how to cut down.

However, in this type of situation another important – and sometimes overlooked – consideration may be patients' **beliefs** about their ability to make, and maintain, the required changes.

'Self-efficacy' describes somebody's belief in their **ability to change**; while behaviour change interventions to increase knowledge and skills may also result in increased patient self-efficacy this is by no means certain.

Fortunately however, research in areas such as physical activity¹ and addiction² has showed that interventions designed specifically to boost self-efficacy **can be effective** – both in terms of enhancing self-efficacy, and in ultimately changing behaviour.

This article summarises three common interventions to boost self-efficacy:

I. INSPIRE FOCUS ON PAST SUCCESSES

Strong evidence demonstrates the effect successful **past behaviour** can have on self-efficacy³. Many patients will likely have attempted the same (or very similar) health-related changes at some point in the past; encouraging the recall or listing of only parts of this behaviour (as opposed to the behaviour in its entirety) can have a positive effect on self-efficacy.

1. Williams, S.L., & French, D.P. (2011). What are the most effective intervention techniques for changing physical activity self-efficacy and physical activity behaviour? *Health Education Research*, 26, 308-322.

2. Hyde, J., Hankins, M., Deale, A., & Marteau, T.M. (2008). Interventions to increase self-efficacy in the context of addiction behaviours: a systematic literature review. *Journal of Health Psychology*, 13, 607-623.

3. Sitzmann, T., & Yeo, G. (2013). Is self-efficacy a product of past performance or a driver of future performance? *Personnel Psychology*, 66, 531-568.



2. LEARN FROM OTHERS

However, if there are no suitable past successes we must look at alternative ways to boost self-efficacy. One approach is to **demonstrate** the desired behaviour. This was done in Sport England's This Girl Can campaign, which used a variety of female role models to help persuade nearly four million women to take part in sport¹. This approach is especially effective if those demonstrating the behaviour are similar to message recipients in terms of their age, gender, and capabilities.

3. VERBAL PERSUASION

Finally, verbal persuasion involves telling the person they can successfully perform the desired behaviour, **arguing against** their self-doubts, and asserting that they can and will succeed. It is the trickiest of the three approaches described here – particularly if especially low self-efficacy is reinforced by highly negative experiences. However, verbal self-persuasion through instructional self-talk has been found to be effective in areas including physical activity².

And finally...

Self-efficacy interventions work in many domains for changing **self-efficacy** and **behaviour itself**.

They are mostly easy to create / implement – either as a self-help technique or prompted by professionals.

Lastly, their chances of success can be further boosted through **combination** with other approaches such as advising on, arranging, or providing social support for the behaviour.

1. Retrieved from: <https://www.thisgirlcan.co.uk/>

2. Tod, D., Hardy, J., & Oliver, E. (2011). Effects of self-talk: A systematic review. *Journal of Sport and Exercise Psychology*, 33, 666-687.

THREE WAYS TO MAINTAIN MOTIVATION FOLLOWING HEALTH RELATED INTERVENTIONS

Introduction

Many 'nudge' based interventions have proved successful over recent years: from increasing vaccination rates¹ – to boosting organ donations² – careful design of the way choices are presented to people has been shown to significantly influence their judgement and decision-making.

However, the examples where nudges have been most successful typically comprise **one-off decisions**, such as those above.

Unfortunately, many behavioural challenges are more difficult – particular those requiring new behaviours to be **repeated over time**.

In such scenarios, despite best intentions it can be very difficult to **maintain motivation**.

This article summarises three common interventions which can help both **patients** and **physicians** maintain motivation for new behaviours:

1. ENCOURAGE GOAL SETTING

Goal setting helps direct **attention** and **effort**. Goals may relate to behaviours or outcomes, and can be set with minimal instructions delivered in print or verbally. It has been shown to be particularly efficacious³ in younger people, males and Asians; evidence also suggests group goals are more effective than individual goals³.

1. Dai, H. et al. (2021). Behavioural nudges increase COVID-19 vaccinations. *Nature*, 597, 404-409.

2. Johnson, E.J., & Goldstein, D. (2003). Do defaults save lives? *Science*, 302, 1338-1339.

3. Epton, T., Currie, S., & Armitage, C.J. (2017). Unique effects of setting goals on behaviour change: Systematic review and meta-analysis. *Journal of Consulting and Clinical Psychology*, 85, 1182-1198.

2. FACILITATE ACTION PLANNING

Action planning is a technique to prompt planning performance of an activity at a particular time. It is a skill which can be acquired, and which helps to both assist in preventing lapses in memory and attention, as well as in organising and regulating motivation. Strategies are **versatile** and can take many forms, such as prompts or instructions provided by a practitioner – or even as written or online print communication.

3. ENABLE FEEDBACK AND MONITORING

Feedback and monitoring interventions help maintain motivation for goals which require repeated efforts by prompting **comparison** of the current situation with stated goals. Methods include written or electronic diaries, mobile apps or medical records; monitoring can be active or passive and may be done by oneself or others. This type of intervention has successfully helped people with weight, blood pressure, and blood glucose goals¹.

And finally...

Despite best intentions, our motivation to do new behaviours can **fluctuate** over time.

The approaches described above have been proven to help overcome cognitive challenges such as lapses in **memory** and **attention**, as well as helping to **organise** and **regulate** effort.

Indeed, strategies which encompass **two or even all three** of the above will generate an even greater chance of success.

Activate Research helps to inspire change and drive growth through enabling a deeper understanding of how people think and why they behave as they do.

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