



Effectiveness of personal letters to healthcare professionals in changing clinical practice behaviours: A systematic review and meta-analysis

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About the research / Study

Aims

The systematic review and meta-analysis reports the effectiveness of personal letters interventions in altering health-care professionals' (HCPs) clinical behaviour. Specifically, four research questions are considered:

- (i) Are personal letters sent to HCPs from healthcare organisations effective in changing their clinical behaviour?
- (ii) What are the behavioural change techniques (BCTs) within letters sent to HCPs that have been evaluated?
- (iii) What BCTs are effective in changing healthcare professional behaviour?
- (iv) Does the effectiveness of letters sent to change HCPs' behaviour vary by: a) characteristics of the sender; b) characteristics of the receiver; c) characteristics of the target behaviour; d) mode of message email vs. letter; e) additional communications; f) additional content; g) other letter characteristics that may not be classified according to the existing BCT taxonomies?

Method

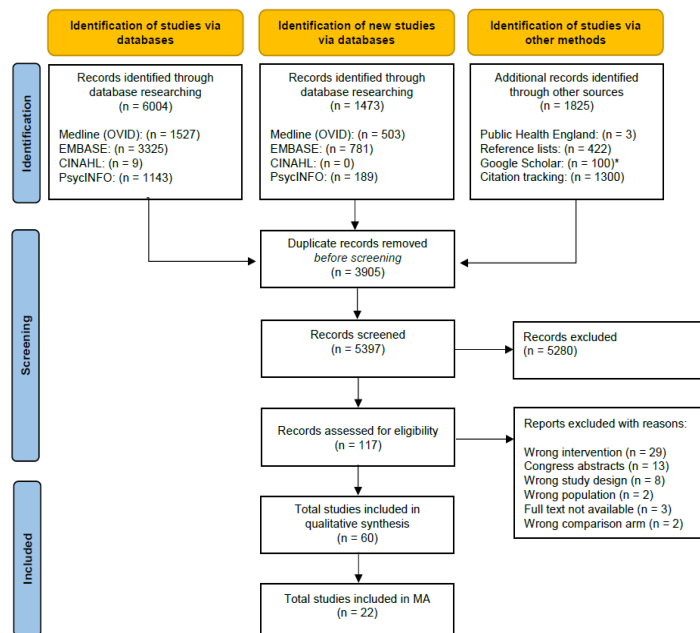
A comprehensive literature search of electronic databases (CINAHL, PsycINFO, MEDLINE, EMBASE) and other methods (databases of "grey" literature, Google Scholar search engine, relevant references) was conducted up to September 2022. The primary outcomes were any changes of HCPs' behaviour due to the personal letters.

Personal letters interventions were content analysed by using MINDSPACE contextual influencers and behaviour change techniques (BCTs). Narrative synthesis and meta-analyses were conducted. Study quality was assessed with Cochrane's risk-of-bias tool (RoB 2).

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Recommendations

- Frame personal letters to incorporate social norms and feedback.
- Deliver clear letter content about risks, increasing the HCPs' awareness of the consequences of their behaviours for patients' health.
- Provide clear instructions in the personal letters on how to perform the desirable behaviour.
- Tailor personal letters by highlighting similar characteristics of receivers and senders (e.g., demographic, behavioural).
- Frame the personal letters by taking into consideration the tendency of individuals to behave in ways that support the impression of a positive and consistent self-image.





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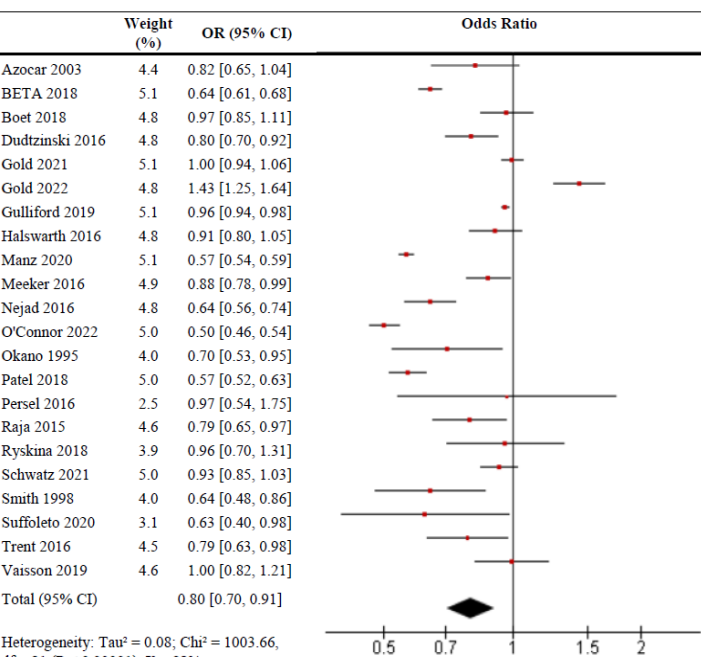
Key Findings

- Sixty-three identified RCT studies across 14 countries.
- Moderate quality of included studies, with only three studies rated as ‘high risk of bias’.
- Personal letters that incorporate social norms feedback represent a promising strategy for enhancing medical decision-making.
- Significant change in the clinical behaviour of HCPs when using personal letters interventions that incorporated the contextual influencers: “Salience”, “Norms” and “Ego”.
- Significant change in the clinical behaviour of HCPs when using personal letters interventions that incorporated the **reflective motivational** (e.g., 5. natural consequences, 6. comparison of behaviour, 9. comparison of outcomes) and **self-regulatory** (e.g., 2. feedback and monitoring, 3. social support, 4. shaping knowledge) BCTs.

Implications and future work

- Multiple benefits of using different behavioural frameworks (MINDSPACE & BCTT v1), such as:
 - * *discovering influences lacking in each framework*
 - * *creating future opportunities to enrich the frameworks*
 - * *combining the frameworks into a more comprehensive and systematic theory of behaviour change*
- The review provides insights into how personal letters can be optimised to effectively change HCPs’ clinical behaviour.
- The evidence on personal letters implies that it is a promising, low-cost strategy for enhancing medical decision-making and, consequently, healthcare practice.
- Such insights are important for Government health agencies and policy makers.

Table 1. Random-effects Forest plot of the effect of personal letters interventions on healthcare professionals’ behaviour



Heterogeneity: Tau² = 0.08; Chi² = 1003.66, df = 21 (P < 0.00001); I² = 98%
Test for overall effect: Z = 3.45 (P = 0.0006)

*OR=Odds ratio. τ²=variance of the true effect sizes.

Dear Dr [GP_Surname]

Antibiotic usage in your practice

Antimicrobial resistance is a serious and growing threat to our health. Reducing unnecessary prescriptions in primary care may help prevent a public health catastrophe.

The great majority (80%) of practices in [NHS Area Team] prescribe fewer antibiotics per head than yours.*

Many practices are already taking action to reduce antibiotic prescriptions while safeguarding patients’ health. Please join them by taking three simple actions:

1. Give patients advice on self-care instead – you can use the leaflet enclosed or search online for the “TARGET antibiotics toolkit”.
2. Consider offering a back-up (delayed) prescription instead – this could be post-dated or collected by the patient a few days later if still necessary.
3. Talk to other prescribers in your practice to ensure they are also acting – data on prescribing is recorded at practice level.

I know that prescribers are aware of this problem and that prescribing is not a simple issue. But there are small changes we can all make that will have a big effect on everyone’s health. Please join us in reducing antibiotic use.

Yours,

PROFESSOR DAME SALLY C DAVIES
CHIEF MEDICAL OFFICER

References

1. Hallsworth, M., Chadborn, T., Sallis, A., Sanders, M., Berry, D., Greaves, F., Clements, L., & Davies, S. C. (2016). Provision of social norm feedback to high prescribers of antibiotics in general practice: a pragmatic national randomised controlled trial. *Lancet* (London, England), 387(10029), 1743–1752.
2. Grimani, A., Goffe, L., Tang, M. Y., Beyer, F., Sniehotta, F. F., & Vlaev, I. (2021). Effectiveness of personal letters to healthcare professionals in changing professional behaviours: a systematic review protocol. *Syst Rev*, 10(1), 94. doi:10.1186/s13643-021-01650-4.



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Appendix

MINDSPACE contextual influencers with significant effect

Definitions

Salience	Individuals' behaviours are influenced by what draws attention and seems relevant. or appeals to local culture can increase the salience of messages
Norms	Individuals are strongly influenced by what others do, which shape the social and cultural norms in a society or social network.
Ego	Individuals tend to behave in ways that support the impression of a positive and consistent self-image.

BCTs with positive effect

Definitions

2.2. Feedback on behaviour	Monitor and provide informative or evaluative feedback on performance of the behaviour (e.g. form, frequency, duration, intensity).
3.2. Social support (practical)	Advise on, arrange, or provide practical help (e.g. from friends, relatives, colleagues, 'buddies' or staff) for performance of the behaviour.
4.1. Instruction on how to perform a behaviour	Advise or agree on how to perform the behaviour (includes 'Skills training').
5.1. Information about health consequences	Provide information (e.g. written, verbal, visual) about health consequences of performing the behaviour).
5.2. Salience of consequences	Use methods specifically designed to emphasise the consequences of performing the behaviour with the aim of making them more memorable (goes beyond informing about consequences).
5.3. Information about social and environmental consequences	Provide information (e.g. written, verbal, visual) about social and environmental consequences of performing the behaviour).
6.2. Social comparison	Draw attention to others' performance to allow comparison with the person's own performance.
9.1. Credible source	Present verbal or visual communication from a credible source in favour of or against the behaviour.

Table 2. Random-effects Forest plot of the effect of personal letters interventions on healthcare professionals' behaviour: Subgroup analysis by contextual influencers (MINDSPACE)

NS	Weight %	OR [95% CI]
Boet 2018	6.4	0.97 [0.85, 1.11]
Dudtzinski 2016	6.4	0.80 [0.70, 0.92]
Gulliford 2019	6.9	0.96 [0.94, 0.98]
Nejad 2016	6.4	0.64 [0.56, 0.74]
Raja 2015	5.9	0.79 [0.65, 0.97]
Ryskina 2018	4.8	0.96 [0.70, 1.31]
Smith 1998	5.0	0.64 [0.48, 0.86]
Suffoletto 2020	3.6	0.63 [0.40, 0.98]
Trent 2016	5.7	0.79 [0.63, 0.98]
Subtotal (95% CI)	51.1	0.81 [0.71, 0.91]
Heterogeneity: Tau ² = 0.03; Chi ² = 53.91, df = 8 (P < 0.00001); I ² = 85%		
Test for overall effect: Z = 3.33 (P = 0.0009)		
NSE	Weight %	OR [95% CI]
Meeker 2016	6.5	0.88 [0.78, 0.99]
Persel 2016	2.7	0.97 [0.54, 1.75]
Subtotal (95% CI)	9.2	0.88 [0.79, 0.99]
Heterogeneity: Tau ² = 0.00; Chi ² = 0.11, df = 1 (P = 0.74); I ² = 0%		
Test for overall effect: Z = 2.14 (P = 0.03)		
Total (95% CI)	Weight %	OR [95% CI]
100.0	0.83	[0.73, 0.94]
Heterogeneity: Tau ² = 0.06; Chi ² = 475.46, df = 16 (P < 0.00001); I ² = 97%		
Test for overall effect: Z = 2.96 (P = 0.003)		
Test for subgroup differences: Chi ² = 1.07, df = 2 (P = 0.59); I ² = 0%		

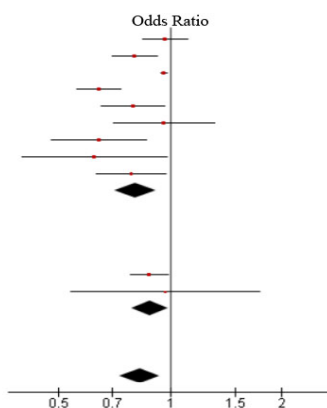
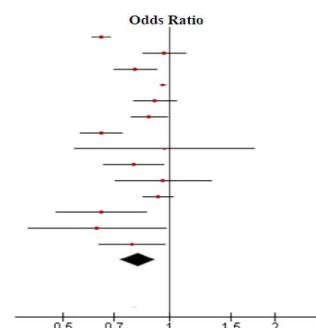


Table 3. Random-effects Forest plot of the effect of personal letters interventions on healthcare professionals' behaviour: Subgroup analysis by BCTs

RM/SR	Weight %	OR [95% CI]
BETA 2018	5.3	0.64 [0.61, 0.68]
Boet 2018	5.1	0.97 [0.85, 1.11]
Dudtzinski 2016	5.1	0.80 [0.70, 0.92]
Gulliford 2019	5.3	0.96 [0.94, 0.98]
Halswarth 2016	5.1	0.91 [0.80, 1.05]
Meeker 2016	5.1	0.88 [0.78, 0.99]
Nejad 2016	5.1	0.64 [0.56, 0.74]
Persel 2016	2.6	0.97 [0.54, 1.75]
Raja 2015	4.8	0.79 [0.65, 0.97]
Ryskina 2018	4.1	0.96 [0.70, 1.31]
Schwatz 2021	5.2	0.93 [0.85, 1.03]
Smith 1998	4.2	0.64 [0.48, 0.86]
Suffoletto 2020	3.3	0.63 [0.40, 0.98]
Trent 2016	4.7	0.79 [0.63, 0.98]
Subtotal (95% CI)	64.9	0.82 [0.73, 0.92]
Heterogeneity: Tau ² = 0.04; Chi ² = 202.99, df = 13 (P < 0.00001); I ² = 94%		
Test for overall effect: Z = 3.45 (P = 0.0006)		



Acknowledgements

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