

Best Evidence Summaries of Topics in Mental Healthcare

BEST *in* **MH** *clinical question-answering service*

Question

“For people with serious mental illness, how effective are information and communication technology-based prompting for treatment compliance, compared to any other intervention / no intervention, for increasing treatment compliance?”

Clarification of question using PICO structure

Patients: People with serious mental illness
Intervention: Information and communication technology (ICT) based prompting for treatment compliance
Comparator: Any
Outcome: Treatment compliance

Clinical and research implications

There was a lack of evidence supporting the use of ICT-based prompts in increasing medication compliance in adults with serious mental illness. Only one, moderate quality trial was found which found no significant difference between ICT-based prompts (text messaging) and standard care for medication compliance, regardless of how it was measured. More good quality research in this area is needed.

What does the evidence say?

Number of included studies/reviews (number of participants)

There was one Cochrane systematic review containing two relevant studies (n=413), however only one of these studies reported treatment compliance as an outcome. That was a randomised controlled trial comparing ICT-based prompts (text messaging) with standard care, conducted in 320 adults with schizophrenia, schizoaffective disorder or mood disorder.

Main Findings

There was no clear evidence that ICT-based prompts increased improvement in treatment compliance (either a reduction in compliance score or the number of people who said they would stop taking their medication).

Authors Conclusions

The evidence for the effects of ICT-based prompts is still inconclusive. The results of an ongoing trial are awaited but more well-conducted trials evaluating different ICT-based prompts are needed. (Note: the searches for this review were completed in July 2012 and the ongoing study (Välimäki) was due to be closed in late 2014).

Reliability of conclusions/Strength of evidence

This was a well-conducted systematic review and all the method seemed appropriate, therefore it is rated as being a low risk of bias. The one study within it that reported on the outcomes for this question was considered to be moderate quality as it was unclear whether it used blinding and some participants were excluded from the analysis. Given that there was only one study, there is a lack of high quality evidence about the use of ICT-based prompts to improve treatment compliance in people with serious mental illness.

What do guidelines say?

Neither National Institute for Health and Care Excellence (NICE) nor Scottish Intercollegiate Guidelines Network (SIGN) guidelines make recommendations regarding the use of information and communication technology-based prompting for treatment compliance for adults with serious mental illness.

Date question received: 03/09/2014
Date searches conducted: 09/10/2014
Date answer completed: 01/12/2014

References

Kauppi, K., Välimäki, M., Hätönen, H. M., Kuosmanen, L. M., Warwick-Smith, K., & Adams, C. E. (2014). Information and communication technology based prompting for treatment compliance for people with serious mental illness. *Cochrane Database of Systematic Review, Issue 6*. Art. No.: CD009960. DOI: 10.1002/14651858.CD009960.pub2.

Results

Systematic Reviews

Author (year)	Search Date	Inclusion criteria	Number of included studies	Summary of results	Risk of bias
Kauppi et al. (2014)	07/2012	<p><i>Participants:</i> Individuals with a diagnosis of serious mental illness: Adults, however defined, with schizophrenia or related disorders, including schizophreniform disorder, schizoaffective disorder and delusional disorder, again, by any means of diagnosis. Participants were not excluded due to age, nationality, gender, duration of illness or treatment setting.</p> <p><i>Intervention:</i> ICT for prompting support, either with or without standard professional care.</p> <p><i>Comparator:</i> Either prompting support with no technology, or standard professional care.</p> <p><i>Outcome:</i> Primary outcome: treatment compliance measured using MAQ (Morisky Green Adherence Questionnaire) and DAI-10 (Drug Attitude Inventory Version 10). Secondary outcomes: service utilisation, mental state, insight, behaviour, quality of life, functioning, satisfaction with treatment, acceptability of intervention, costs, and adverse effects.</p> <p><i>Study designs:</i> Randomised controlled trials (RCTs).</p>	2 (n=413)	<p>The participants in the two included trials had diagnoses of schizophrenia, schizoaffective disorder or mood disorder such as uni- or bipolar depression. The mean age was between 40 and 46 years and participants were clinically stable outpatients considered to have poor adherence to antipsychotic therapy. Both studies were at a moderate risk of bias.</p> <p>One study compared a digital communication device plus usual care, with usual care in 93 participants. The intervention lasted for 18 months and outcomes were measured at baseline and 9 and 18 months.</p> <p>The other study compared daily mobile phone text messages to standard care in 320 participants. The intervention</p>	<p>Low : this was a well-conducted Cochrane review.</p> <p>The inclusion and exclusion criteria were clearly stated and appropriate for the question.</p> <p>The literature searches covered a range of relevant databases, hand searching, grey literature, and conference proceedings, without any date or language restrictions.</p> <p>All review stages were undertaken by at least</p>


			<p>lasted for 12 weeks and follow-up was for 6 months.</p> <p>Only the text messaging study measured compliance with medication. There was no significant difference between ICT-based prompting and usual care regardless of how compliance was measured (a reduction in score, or stopping medication). For the reduction in MAQ score the relative risk (RR) was 1.02 (95% CI 0.95 to 1.10). However the medium-term mean DAI-10 score was significantly higher, favouring text messaging (mean difference 1.40 (95% CI 1.32 to 1.48)).</p>	<p>two reviewers independently.</p> <p>Results were mostly presented descriptively, only one or two outcomes could be combined using meta-analysis.</p>
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Risk of Bias:

SRs

Author (year)	Risk of Bias				
	Inclusion criteria	Searches	Review Process	Quality assessment	Synthesis
Kauppi et al. (2014)					

 Low Risk

 High Risk

 Unclear Risk

Search Details

Source	Search Strategy	Number of hits	Relevant evidence identified
<i>SRs and Guidelines</i>			
NICE	treatment compliance mental health technology	369	0
<i>Primary studies</i>			
CENTRAL	#1 MeSH descriptor: [Mental Disorders] explode all trees 43657 #2 appointment* or attend* or remind* or prompt* 19793 #3 letter* or telephone* or text* or messag* 32677 #4 email* or online or ICT or computer* or internet 34460 #5 msn or electronic or virtual or facebook or twitter 14724 #6 msn or sms or blog or "world wide web" 912 #7 #3 or #4 or #5 or #6 64350 #8 #1 and #2 and #7 610 #9 2012 or 213 or 2014 or 2015 127789 #10 #8 and #9 288 Central only 26	26	0
PsycINFO	1. PsycINFO; exp MENTAL DISORDERS/; 448107 results. 2. PsycINFO; appointment*.ti,ab; 4862 results. 3. PsycINFO; attend*.ti,ab; 68038 results. 4. PsycINFO; remind*.ti,ab; 9309 results. 5. PsycINFO; prompt*.ti,ab; 16653 results. 6. PsycINFO; 2 OR 3 OR 4 OR 5; 96775 results. 7. PsycINFO; letter*.ti,ab; 29271 results. 8. PsycINFO; telephone*.ti,ab; 18324 results. 9. PsycINFO; text*.ti,ab; 79420 results.	51	0

	<p>10. PsycINFO; (email* OR e-mail*).ti,ab; 5801 results.</p> <p>11. PsycINFO; SMS*.ti,ab; 962 results.</p> <p>12. PsycINFO; messeng*.ti,ab; 2479 results.</p> <p>13. PsycINFO; msn*.ti,ab; 512 results.</p> <p>14. PsycINFO; 7 OR 8 OR 9 OR 10 OR 11 OR 12 OR 13; 133412 results.</p> <p>15. PsycINFO; computer*.ti,ab; 68998 results.</p> <p>16. PsycINFO; internet.ti,ab; 23362 results.</p> <p>17. PsycINFO; ICT.ti,ab; 1998 results.</p> <p>18. PsycINFO; facebook.ti,ab; 1467 results.</p> <p>19. PsycINFO; twitter.ti,ab; 593 results.</p> <p>20. PsycINFO; 15 OR 16 OR 17 OR 18 OR 19; 91810 results.</p> <p>21. PsycINFO; 14 OR 20; 216205 results.</p> <p>22. PsycINFO; 1 AND 6 AND 21; 615 results.</p> <p>23. PsycINFO; CLINICAL TRIALS/; 7958 results.</p> <p>24. PsycINFO; random*.ti,ab; 133909 results.</p> <p>25. PsycINFO; groups.ti,ab; 374870 results.</p> <p>26. PsycINFO; (double adj3 blind).ti,ab; 18156 results.</p> <p>27. PsycINFO; (single adj3 blind).ti,ab; 1442 results.</p> <p>28. PsycINFO; EXPERIMENTAL DESIGN/; 9288 results.</p> <p>29. PsycINFO; controlled.ti,ab; 83052 results.</p> <p>30. PsycINFO; (clinical adj3 study).ti,ab; 8127 results.</p> <p>31. PsycINFO; trial.ti,ab; 70442 results.</p> <p>32. PsycINFO; "treatment outcome clinical trial".md; 27915 results.</p> <p>33. PsycINFO; 23 OR 24 OR 25 OR 26 OR 27 OR 28 OR 29 OR 30 OR 31 OR 32; 581273 results.</p> <p>34. PsycINFO; 22 AND 33; 170 results.</p>		
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	35. PsycINFO; 34 [Limit to: Publication Year 2012-2014]; 51 results.		
Embase	23. EMBASE; exp MENTAL DISORDERS/; 1517113 results. 24. EMBASE; appointment*.ti,ab; 19735 results. 25. EMBASE; attend*.ti,ab; 156085 results. 26. EMBASE; remind*.ti,ab; 16238 results. 27. EMBASE; prompt*.ti,ab; 111174 results. 28. EMBASE; 24 OR 25 OR 26 OR 27; 294627 results. 29. EMBASE; letter*.ti,ab; 132323 results. 30. EMBASE; telephone*.ti,ab; 52154 results. 31. EMBASE; text*.ti,ab; 80891 results. 32. EMBASE; (email* OR e-mail*).ti,ab; 15589 results. 33. EMBASE; SMS*.ti,ab; 4738 results. 34. EMBASE; messeng*.ti,ab; 61029 results. 35. EMBASE; msn*.ti,ab; 5286 results. 36. EMBASE; 29 OR 30 OR 31 OR 32 OR 33 OR 34 OR 35; 346467 results. 37. EMBASE; computer*.ti,ab; 263735 results. 38. EMBASE; internet.ti,ab; 38451 results. 39. EMBASE; ICT.ti,ab; 3625 results. 40. EMBASE; facebook.ti,ab; 1300 results. 41. EMBASE; twitter.ti,ab; 740 results. 42. EMBASE; 37 OR 38 OR 39 OR 40 OR 41; 302213 results. 43. EMBASE; 36 OR 42; 633306 results. 44. EMBASE; 23 AND 28 AND 43; 1938 results. 45. EMBASE; random*.ti,ab; 903966 results. 46. EMBASE; factorial*.ti,ab; 23398 results.	174	0

	<p>47. EMBASE; (crossover* OR cross-over*).ti,ab; 69965 results.</p> <p>48. EMBASE; placebo*.ti,ab; 202525 results.</p> <p>49. EMBASE; (doubl* ADJ blind*).ti,ab; 143754 results.</p> <p>50. EMBASE; (singl* ADJ blind*).ti,ab; 14685 results.</p> <p>51. EMBASE; assign*.ti,ab; 242860 results.</p> <p>52. EMBASE; allocat*.ti,ab; 85555 results.</p> <p>53. EMBASE; volunteer*.ti,ab; 178196 results.</p> <p>54. EMBASE; CROSSOVER PROCEDURE/; 40306 results.</p> <p>55. EMBASE; DOUBLE BLIND PROCEDURE/; 115609 results.</p> <p>56. EMBASE; RANDOMIZED CONTROLLED TRIAL/; 350916 results.</p> <p>57. EMBASE; SINGLE BLIND PROCEDURE/; 18869 results.</p> <p>58. EMBASE; 45 OR 46 OR 47 OR 48 OR 49 OR 50 OR 51 OR 52 OR 53 OR 54 OR 55 OR 56 OR 57; 1437317 results.</p> <p>59. EMBASE; 44 AND 58; 507 results.</p> <p>60. EMBASE; 59 [Limit to: Publication Year 2012-2014]; 174 results.</p>		
Medline	<p>23. MEDLINE; exp MENTAL DISORDERS/; 995274 results.</p> <p>24. MEDLINE; appointment*.ti,ab; 14222 results.</p> <p>25. MEDLINE; attend*.ti,ab; 122693 results.</p> <p>26. MEDLINE; remind*.ti,ab; 12297 results.</p> <p>27. MEDLINE; prompt*.ti,ab; 93145 results.</p> <p>28. MEDLINE; 24 OR 25 OR 26 OR 27; 236866 results.</p> <p>29. MEDLINE; letter*.ti,ab; 70082 results.</p> <p>30. MEDLINE; telephone*.ti,ab; 43395 results.</p>	97	0

	<p>31. MEDLINE; text*.ti,ab; 85785 results.</p> <p>32. MEDLINE; (email* OR e-mail*).ti,ab; 12544 results.</p> <p>33. MEDLINE; SMS*.ti,ab; 3995 results.</p> <p>34. MEDLINE; messeng*.ti,ab; 62648 results.</p> <p>35. MEDLINE; msn*.ti,ab; 3440 results.</p> <p>36. MEDLINE; 29 OR 30 OR 31 OR 32 OR 33 OR 34 OR 35; 277849 results.</p> <p>37. MEDLINE; computer*.ti,ab; 238780 results.</p> <p>38. MEDLINE; internet.ti,ab; 30314 results.</p> <p>39. MEDLINE; ICT.ti,ab; 2849 results.</p> <p>40. MEDLINE; facebook.ti,ab; 824 results.</p> <p>41. MEDLINE; twitter.ti,ab; 514 results.</p> <p>42. MEDLINE; 37 OR 38 OR 39 OR 40 OR 41; 268970 results.</p> <p>43. MEDLINE; 36 OR 42; 534506 results.</p> <p>44. MEDLINE; 23 AND 28 AND 43; 970 results.</p> <p>45. MEDLINE; "randomized controlled trial".pt; 396972 results.</p> <p>46. MEDLINE; "controlled clinical trial".pt; 90468 results.</p> <p>47. MEDLINE; randomized.ab; 316164 results.</p> <p>48. MEDLINE; placebo.ab; 162695 results.</p> <p>49. MEDLINE; "drug therapy".fs; 1773912 results.</p> <p>50. MEDLINE; randomly.ab; 226790 results.</p> <p>51. MEDLINE; trial.ab; 329905 results.</p> <p>52. MEDLINE; groups.ab; 1426574 results.</p> <p>53. MEDLINE; 45 OR 46 OR 47 OR 48 OR 49 OR 50 OR 51 OR 52; 3504336 results.</p> <p>54. MEDLINE; 44 AND 53; 410 results.</p> <p>55. MEDLINE; 54 [Limit to: Publication Year 2012-2014]; 97 results.</p>		
Summary	NA	NA	

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