**Multimedia Appendix 4: Outcomes of smartphone app interventions**

<table>
<thead>
<tr>
<th>Author/year (Condition)</th>
<th>Main Results</th>
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</table>
| **Hammonds et al, 2015 (Depression)** [42] | **Adherence:**  
- Participants in intervention group were 3.5 times more likely to adhere to medication regimen than control group (p=0.057)  
- Adherence by pill count was not significantly different between groups  
- Overall adherence: 45% adherent (>=80%), 40% under-users (<80%), and 6% over-users (>100%), all in controls  

**Clinical:**  
- Depression was not significantly different between groups  
- Medication under-users of were 3.4 more likely to endorse illicit drug use |
| **Cafazzo et al, 2012 (Diabetes Mellitus)** [35] | **Self-management/Adherence:**  
- Self-care inventory showed no significant changes in all dimensions, including adherence  
- The frequency of daily average blood glucose measurements increased by 50% from 2.4 to 3.6 per day (p=0.006)  
- Glycosylated hemoglobin (HbA1c) values did not significantly change over pilot period (p=0.11)  

**Usability/Acceptability:**  
- Study satisfaction was high, 88% stated that they would continue to use the system, and 50% of patients had more than 10 awards  

**Clinical:**  
- Diabetes HRQOL dimensions and parent–adolescent patient interactions showed no change over study-period |
| **Creary et al, 2014 (Sickle Cell Disease)** [36] | **Adherence:**  
- Morisky Medication Adherence Scale (MMAS-4) scores (<2): 9/14 participants at 2–4 months and 10/14 participants at 6 months (p=0.004)  
- Medication possession ratio adherence (median, IQR): pre-study 0.75 (0.59–0.82) vs. post-study 0.91 (0.85–1.00) (p=0.02)  
- Observed HU adherence rate: median of 93.3% for each month, 10/14 had ≥90% adherence, and 12/14 had ≥80% adherence  
- Mean corpuscular volume (median, IQR): pre-study 96 (91–107.9) vs. post-study 107.2 (96.3–113.3) (p=0.009)  
- HbF (median, IQR): pre-study 10.5 (6–17) and post-study 11.4 (9.3–18.9) (p=0.03)  
- Treatment Satisfaction Questionnaire for Medication (TSQM-9) in patients with MMAS-4 (<2) (mean, standard deviation): pre-study 82.8% ± 16.7% vs. post-study 95.6% ± 5.1% (p=0.03)  
- TSQM-9 in patients with medication possession ratio (≥90): pre-study 74.7% ± 16.6% vs. post-study 96.0% ± 5.3% (p=0.008)  

**Usability/Acceptability:**  
- Less than 20 minutes daily to complete study observations, record adherence, and provide feedback to the enrolled participants  
- Mobile-DOT Trial period: 13/14 completed in <14 days and 1/14 completed in 30-days  
- Text messages didn't disrupt participants’ daily activities  
- Mobile DOT was not intrusive  
- 13/14 participants completed Mobile-DOT in <3 minutes daily  
- All participants continued to submit videos and receive alerts, feedback, and incentives as part of extension study |