Supplementary Data

Appendix Table 2. Effectiveness of nurse interventions to improve medication adherence. A positive clinical effect is any improvement in adherence measurement (whether statistically significant or not) in the intervention group as compared with the control group.

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| **Authors** **(year)****Country** | **Measure method of medication adherence outcome** | **Sample Size****Intervention group – Usualcare group** | **Mean Age****(SD)** | **Sex****Male (M)****Female (F)****In %** | **Number of medicines**  | **Definition of outcome** | **Time(s) of outcome measure-ments (month)** | **Baseline** | **Intervention group** | **Usual care group** | **P-value** | **Positive clinical effect on adherence** | **Statistically significant effect on adherence** |
| **Nurse-led interventions** |
| Barnason et al. (2010)USA | Brief Medication Questionnaire (BMQ) 1 | N: 40Intervention group: 20Usual care group: 20 | 76.9 (6.5) | 65% M35% F | 11.3 (SD = 3.8) for both groups | Mean score of medication adherence | 13 | Intervention: 98.3 (0.1) vs Usual- care 93.7 (0.1) | 1 month: 99.6 (SD = 1.8)3 months: 98.8 (SD = 5.6) | 1 month: 82.9 (SD = 26.2)3 months: 86.7 (SD = 17.4) | 0.64 | no | no |
| Garcia-Aymerich et al.(2007)Spain | Medication Adherence Scale (MAS) 3Inhaler Adherence Scale (IAS)4 | N: 113Intervention group: 44Usual care group: 69 | 73 (8) | 86% M14 % F | Intervention group4(SD = not available)Usual care group (5 SD = not available) | MAS: Compliant (all answers correct = 4) VS Non-compliant (one or more mistakes =< 4)IAS: Compliant (all answers correct = 4) VS Non-compliant (one or more mistakes = < 4) | 12 |   | 19 (compliant) /2 (non-compliant)15 (compliant) /6 (non-compliant) | 35 (compliant)/6 (non-compliant)15 (compliant /26 (non-compliant) | 0.570.009 | yesyes | noyes |
| Kennedy(1990)USA | Medication Error Rating (MER)5 | N: 65Intervention group: 32Usual care group: 33 | Intervention group: 77.9Usual care group: 75.9 | 32% M68% F | Intervention groupOld medics 2.6 (SD = 2.0)Newly prescribed medics 2.4 (SD = 1.5)Usual care groupnon available  | Mean score of medication adherence | 1 |   | 4.01 (SD = 5.3) | 10.08 (SD = 9.2) |  0.030 | yes | yes |
| Wolfe & Schirm (1992)USA | Interview  | N: 50Intervention group: 25Usual care group: 25 | Intervention group: 72.8 (5.8)Usual care group: 75.2 (7.5) | 42% M58% F | Intervention group 4.9 (SD = 2.9)Usual care group4.3 (SD = 1.9) | Compliant (adherent to container’s directions) VS Non-compliant (did not take medication as prescribed) | 1.5 |   | 9/9 | 13/7 | > 0.05 | yes | no |
| Hornnes et al. (2011)Denmark | Interview | N: 303Intervention group: 145Usual care group: 158 | Intervention group: 70.2 (13.7)Usual care group: 68.5 (12.2) | 51% M49% F | not available | Compliant (80% or more of doses taken during the last two weeks) VS Non-compliant (79% or less of doses taken during the last two weeks) | 12 |   | 98/2 | 99/13 | 0.496 | yes | no |
| Weller (2015)USA | Modified Center for Adherence Support Evaluation (CASE) adherence index 6 | N: 16Intervention group: 8Usual-care group: 8 | 73.13 (5) | not available | not available | CASE: > 10 = good adherence< 10 = poor adherence  | 0.75 | 1 week3 weeks | 15.3815.50 | 14.8815.00 | 0.5760.531 | yes | no |
| Zhao & Wong (2009)China | Daily record | N: 200Intervention group: 100Usual care group: 100 | Intervention group: 72.9 (6.4)Usual care group: 71.6 (4.1) | 52% M48% F | not available | Percentage of patients in each category of medication adherence: high, moderate, and low | 3 |   | High: 51 (51%), Moderate: 39 (46%),Low : 3 (3%) | High: 86 (86%), Moderate: 11 (11%)Low: 3 (3%) | < 0.001 | yes | yes |

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| **Nurse-collaborative interventions** |
| Eggink et al.(2010)Netherlands | Brief Medication Questionnaire – Regimen screen (BMQ) > 2 = non-adherent | N: 85 Intervention group: 41Usual care group: 44 | Intervention group: 74 (10)Usual care group: 72 (10) | 67% M33% F | Intervention group10 (SD = 4)Usual care group9 (SD = 3) | Proportion of compliant patients (score of 0 on BMQ) VS Proportion of non-compliant patients (score of 1 or more on BMQ) | 1.5 |   | 78% / 22% | 79.5% / 20.5% | RR: 1.07 (95% CI: 0.47–2.44) | no | no |
| Bisharat et al. (2012)Israel | Medication Possession Ratio (MPR)7 | N: 74Intervention group: 33Usual care group: 41 | Intervention group: 65.3 (12.2)Usual care group: 72.73 (10.6) | 68% M32% F | Intervention group7 (SD = 2.7)Usual care group6.6 (SD = 1.9) | Proportion of compliant patients (80% or more on MPR) | 9 |   | 77.8% (SD = 22.9) | 62.6% (SD = 24.5) | < 0.05 | yes | yes |
| Rich et al.(1996)USA | Pill counts | N: 156Intervention group: 80Usual care group: 76 | 79.4 (6.0) | 33% M 67% F | Intervention group 5.2 (SD = 2.4)Usual care group5.2 (SD = 2.5) | Percentage of pills taken correctly for each medication | 1 |   | 87.9% (SD = 12%) | 81.1% (SD = 17.2%) | 0.003 | yes | yes |
| Rinfret et al.(2013)Canada | Refill adherence 8 | N: 300Intervention group: 150Usual care group: 150 | Intervention group: 63.4 (10)Usual care group: 64.3 (10) | 73% M27% F | Intervention group 3 (SD = 0)Usual care group 3 (CD = 0) | Proportion of day covered by aspirin and Clopidrogrel | 12 |   | Aspirin: 99.2% (97.5%–100%);Clopidrol: 99.3% (97.5%–100%) | Aspirin: 90.2% range: 84.2%–95.4%Clopidrol: 91.5% range: 85.1%–96.0% | < 0.001< 0.001 | yes | yes |
| Tsuyuki et al.(2004)Canada | Medication Possession Ratio (MPR):7 No. days medicine dispensed divided by no. days follow-up | N: 276Intervention group: 140Usual care group: 136 | Intervention group: 71 (12)Usual care group: 72 (12) | 58% M42% F | Intervention group5 (SD = not available)Usual care group5 (SD = not available) | Mean MPR | 6 |   | 83.5 (29%) | 86.2% (SD = 29) | 0.691 | no | no |
| Rytter et al. (2010)Denmark | Interview | N: 293Intervention group: 148Usual care group: 145 | Intervention group: 84Usual care group: 83 | 33% M 67% F  | Intervention group 6(range 4.5-9)Usual care group6 (range 4-8) | Proportion of non-compliant (GP reporting medication not taken)  | 3 |   | 28% | 39%  | 0.03 | yes | yes |
| Antonicelli et al. (2010)Italy | Interview | N: 57Intervention Group: 29Usual Care group: 28 | 78.2 (7.3) | 58% M42% F | Intervention group1 (SD = 0)Usual care group1 (SD = 0) | Compliant (took all medication as prescribed) VS Non-compliant (did not take medication as prescribed) | 12 | No difference  | 26/3 | 10/18 | < 0.03 | yes | yes |

Footnote: 1) Brief Medication Questionnaire (BMQ): if ≥ 80% = adherence; 2) Brief Medication Questionnaire–Regimen Screen (BMQ-Regimen Screen): if score ≥ 1 = non-adherence; 3) Medication Adherence Scale (MAS): if < 4 = non-adherence and if 4 = adherence; 4) Inhaler Adherence Scale (IAS): if < 4 = non-adherence and if 4 = adherence; 5) Medication Error Rating (MER); 6) Modified Center for Adherence Support Evaluation (CASE) adherence index: if ≥ 10 = good adherence, if < 10 = poor adherence; 7) Medication Posession Rate: if ≥ 80% respect of prescription = adherence; 8) Refill adherence: if ≥ 80% = adherence