

ADHERENCE THROUGH HOME EDUCATION AND NURSING ASSESSMENT (ATHENA)

Good Evidence – Medication Adherence

INTERVENTION DESCRIPTION

Target Population

- HIV-positive clinic patients who are antiretroviral treatment-experienced

Goals of Intervention

- Improve adherence to antiretroviral therapy

Brief Description

ATHENA is an individual-level intervention in which HIV-positive patients receive up to 24 adherence-related home visits from a nurse and community worker pair. HIV-positive patients are encouraged to identify individual and social factors they perceive influence their success with antiretroviral adherence; take action to address problem issues; and reflect upon the effect of their action. HIV-positive patients define the content and outcome of their own learning through structured and tailored discussions with the nurse and community worker, who serve as expert resources and source of support rather than as voices of authority. In addition to home visits, HIV-positive patients receive usual care which includes adherence support, review of patient medications, and development of individual medication schedules.

Theoretical Basis

- Paulo Freire's Educational Model

Intervention Duration

- Twenty-four home visits on a schedule of declining frequency over 12 months (weekly for 3 months, biweekly for 3 months, and monthly for 6 months)

Intervention Setting

- Residence and community settings

Deliverer

- Nurse and community/peer worker pair

Delivery Methods

- Discussion
- Drawing and song
- Goal setting/plan
- Printed material
- Problem solving

INTERVENTION PACKAGE INFORMATION

For intervention materials, please contact Karina Danvers, New England AIDS Education and Training Center, Yale University School of Medicine AIDS Program, 135 College Street, Suite 323, New Haven, CT 06511.

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EVALUATION STUDY AND RESULTS

The original evaluation was conducted in New Haven and Hartford counties, CT between 1999 and 2002.

Key Intervention Effects

- Increased medication adherence

Study Sample

The baseline study sample of 171 men and women is characterized by the following:

- 42% white, 35% black or African American, 19% Hispanic/Latino, 4% other
- 52% male, 48% female
- 100% treatment-experienced
- 41% participants with > 90% medication adherence measured by MEMS; 70% participants with > 90% self-reported medication adherence
- 53% participants with undetectable viral load (< 400 copies/mL)

Recruitment Settings

HIV outpatient clinics, community-based organizations, and patient support groups

Eligibility Criteria

Men and women were eligible if they were HIV-infected, English and Spanish speakers, had been prescribed combination therapy with at least 3 antiretroviral agents, and intended to take their medications.

Assignment Method

Participants (N = 171) were randomly assigned to 1 of 2 groups: ATHENA intervention (n = 87) or usual care comparison (n = 84).

Comparison Group

Comparison participants received usual care from HIV-dedicated clinical services which were also offered to intervention participants. Usual care included individual review of patient medications by the prescribing clinician and the clinic nurses, assistance with the development of individual medication schedules, identification of strategies to improve adherence, and individualized patient education regarding medication (e.g., dose, side effects, and the need for adherence).

Relevant Outcomes Measured and Follow-up Time

- Medication adherence behavior (recorded using MEMs caps) was defined as the proportion of prescribed doses taken. MEMS cap data was downloaded at each clinic visit (every three months). Medication adherence was categorized as < 90% or > 90% and was assessed at 3, 6, 9, 12 and 15 months post-initiation of intervention.*
- Viral load was measured at 3, 6, 9, 12 and 15 months post-initiation of intervention* and was assessed as undetectable (< 400 copies/mL) and categorized as < 400, 400-10,000, and > 10,000 copies/mL.

Participant Retention

- ATHENA Intervention (time points based on randomization/initiation of the intervention*)
 - 84% retained at 3 months post-initiation of intervention
 - 79% retained at 6 months post-initiation of intervention
 - 68% retained at 9 months post-initiation of intervention
 - 72% retained at 12 months post-initiation of intervention
 - 54% retained at 15 months post-initiation of intervention
- Usual Care Control (time points based on randomization/initiation of the intervention*)
 - 87% retained at 3 months post-initiation of intervention
 - 83% retained at 6 months post-initiation of intervention
 - 80% retained at 9 months post-initiation of intervention
 - 75% retained at 12 months post-initiation of intervention
 - 48% retained at 15 months post-initiation of intervention

Significant Findings

- Over the 12 months post-initiation of intervention*, the proportion of participants who demonstrated > 90% adherence, as assessed by MEMs caps, was significantly greater in the intervention arm than in the comparison arm (extended Mantel-Haenszel test: 4.61, p = .03; missing data not imputed).*

Considerations

- This study did not meet the best-evidence criteria due to <70% retention rate per arm at each assessment and no imputation of missing data. Also, the study did not find a significant positive intervention effect on viral load.
- The finding on > 90% adherence over the 15 months reported in the publication (extended Mantel-Haenszel test: 5.80, p = .02; missing data not imputed) was not considered as evidence of efficacy because the retention rates at 15 months post-initiation of intervention were < 60% in each arm, due to the study closing before all participants had the opportunity to return for the assessment.
- The median number of home visits was 19 out of a possible 24 visits.
- The MEMS cap was placed on one of the participant's medications, selected at random from all those that required twice a day administration.
- At baseline, 32% were on a nonnucleoside reverse transcriptase inhibitor (NNRTI)-based regimen and 43% on a protease inhibitor (PI)-based regimen.

*Information obtained from author

REFERENCES AND CONTACT INFORMATION

Williams, A. B., Fennie, K. P., Bova, C. A., Burgess, J. D., Danvers, K. A., & Dieckhaus, K. D. (2006). [Home visits to improve adherence to highly active antiretroviral therapy: A randomized controlled trial](#). *JAIDS Journal of Acquired Immune Deficiency Syndromes*, 42, 314-321.

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