Role of Community Health Workers in Improving Diabetes Outcomes

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Abstract

Examine the effectiveness of using community health workers (CHWs) to support nurse-led diabetes self-management education (DSME) with medically underserved clients.

Methods

A pretest-posttest group design was used. A sample of 640 was non-randomly drawn from eastern Kentucky Homeplace division clients who reported that they had been told by a health professional they have type-2 diabetes. The sample size was reduced to 489 because of a decrease in project funding.

Inclusion criteria for the study were Kentucky Homeplace clients 18-65+ years of age who reported they had been told by a provider they have diabetes. Client meeting inclusion criteria and who signed an IRB were enrolled until the sample size of 489 was reached.

The treatment consisted of nurse-led DSME in 26 Eastern Kentucky Diabetes Belt counties. CHWs are a nurse educator assessed diabetes knowledge, self-empowerment, clinical profile, and self-care on a pre/post test basis. Health literacy was measured using the Ice Cream Label Test and health status using the SF-12v2. DSME tests were from a battery of measures from the Michigan Diabetes Research and Training Center. All study instruments had been tested for validity and reliability and had been used in published research.

Results

Self-management education improved self-care knowledge and behavior among clients in the treatment group on re-testing after the intervention of DSME. There was improved glucose testing and modest lowering of A1C.

Conclusions

CHWs were effective in providing support for DSME. The CHWs succeeded in screening clients, obtaining their IRB consent, and enrolling them in the study. They also successfully administered study instruments, provided follow-up assistance to clients regarding the DSME and entered data in the Homeplace database.

Sample Characteristics

- 3,523 new Kentucky Homeplace clients were processed in the Eastern region from July 1, 2011 through June 30, 2012.
- 29.5% (1,040) reported they had been told by a health professional they have diabetes.
- 489 (47.0%) of those with diabetes enrolled in the DSME intervention group.
- 10 clients withdrew from the study before the beginning of the DSME component, leaving an effective sample size of 479.
- There was a dropout or lost-to-follow-up of an additional 176 clients, with 303 (63.3%) of sample clients enrolling in the first-round of nurse-led DSME.
- A total of 212 (70.0%) clients in the intervention group received DSME and completed a full battery of pre/post testing.
- This is a 70% completion rate for clients who began the DSME.

Intervention Group Socio/Demographics

- Clients comprising the intervention group had substantially lower median household incomes ($15,990) compared to Kentucky ($41,576) and the US ($31,914).
- Their percentage below the federal poverty level based on household income and family size was much greater (45.7%) than the State (17.7%) and the US (13.8%).
- They were less educated, with 47.6% completing high school and 5.2% completing college when compared to the State (61% and 20.3% respectively) and the US (85% and 27.8% respectively).
- I DO clients in the intervention group had both a higher rate of marriage (60.9%) and divorce (19.5%) when compared to Kentucky adults (52% and 12.4% respectively).
- The percentage of women (65.7%) was greater than men (34.3%), and the self-declared racial identification 98.1% White, 1.4% Black/African American and 0.5% other, reflecting the comparative lack of racial diversity throughout the I DO study area.
- A much higher rate of clients in the I DO intervention group reported not having health insurance coverage (58.1%) compared to (16.9%) for Kentucky adults, and (15.0%) for the US.

Discussion

Based on research, we recommend much greater use of CHWs linked with CDEs in DSME throughout Kentucky, especially in our 85 rural counties and our diabetes belt counties.

Acknowledgements

This research was supported by a gift from Wellpoint Foundation/Atheneum.