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Role of Community Health Workers in Improving Diabetes Outcomes

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Role of Community Health Workers in Improving Diabetes Outcomes

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Abstract

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

Methods
A pre-test-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. The distribution among these 212 I DO clients by the classes of obesity was: Obese (48.1%), severe, (22.2%); Class II, morbid, (25.5%); and Class III, super, (4.2%).

• CHWs were trained in the goals, objectives, and methods of the I DO research project in a hands-on environment in a computer lab. Active supervision and monitoring were available throughout the research project. Graphics and algorithms of the type depicted above were developed to aid the CHWs through the research process from screening, through enrollment of clients, and the administration of the pre/post measures. A hot-line process was established to quickly resolve issues and to share the results of frequently asked questions (FAQs) with all CHWs, principal investigator, and other study personnel.

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 ($51,914).
• 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% high 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 (52% and 12.4% respectively).

Limitations of Study
There are two major limitations for our study. The first is the lack of randomization in the selection clients. Enrollment was voluntary by clients up to the limit of the sample size afters clients reported during screening interviews they had been told by a health professional they have diabetes.

Second is the dropout rate of clients from the initial sample and after the first DSME session. This tends to be a lack of compliance among Homeplace clients with keeping appointments, and the impact of expenses of travel to study meetings contributed to this problem. Efforts were made to lessen the effect of travel expenses for the intervention group by providing gasoline payment cards and meals during the nurse-led DSME.

Discussion
A program to lessen diabetes in this population has the opportunity to focus on modifiable behavioral risk factors that can be prevented or lessened and improved glycemic control through DSME. Based on CDC data from 2008, it was estimated that 12.5% of adults aged ≥ 20 in Kentucky’s diabetes belt counties had type 2 diabetes, 32.3% were obese, and 36.1% were physically inactive. It is not surprising that 71.8% of I DO clients, who are characterized by these risk factors, report that their health as being fair (39.5%) or poor (32.3%).

One obvious approach to lessening these problems would be concentrated and sustained DSME led by Certified Diabetes Educators (CDEs), who would concentrate on reducing the modifiable risk factors and improved glycemic control.

Given the shortage and mis-distribution of CDEs and the long time it takes to become a CDE, 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.

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