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Comparison of Recruitment Efforts Targeted at Primary Care Physicians versus the Community At Large for Participation in Alzheimer's Disease Clinical Trials

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Abstract

Inefficient and delayed recruitment into clinical trials in Alzheimer's disease are major obstacles impeding progress in the discovery of more effective therapeutic strategies to combat this disease. Despite widespread recognition of this problem, limited empirical data demonstrating the effectiveness of specific recruitment strategies are available to guide recruitment endeavors. The present study was designed to evaluate the effectiveness of recruitment efforts targeting either the primary care health professionals (PCP) or patients and families with a community grass-roots outreach event (COE). The primary outcome measure was actual study recruitment and participation in the four months post-intervention. No research subjects were recruited from the PCP intervention, while 69 subjects were recruited into clinical studies from the COE activity (0% vs. 28%, $P < 0.0001$, Fisher exact test). Barriers to recruitment success in the PCP arm included a perception of perceived harm to subjects from research participation and fear of losing patients through clinical research participation. Our results suggest that outreach efforts directed at the potential study subject/caregiver are not only cost-effective but are able to easily accomplish the desired result of direct recruitment into clinical research studies.

Keywords

Alzheimer's disease; clinical trial; recruitment

INTRODUCTION

Recruitment to clinical trials and research studies in Alzheimer's disease (AD) is a major obstacle faced by research teams today ¹⁻⁶. Delays in recruitment can often add substantially to the financial burden of such endeavors, beyond what is needed to complete the trial itself,

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and can significantly delay study results needed to bring potentially disease-modifying therapies to patients 1, 3-5, 7. Despite widespread recognition of this problem with recruitment, there are limited empirical data concerning evaluations of the effectiveness (or ineffectiveness) of specific recruitment strategies to combat this problem.

Published studies examining the cost and effectiveness of different recruitment methods involve medical conditions and populations distinct from those targeted in AD research 8-16. As such, motivations to participate in research studies and strategies to recruit potential participants may be quite different. Current and upcoming clinical research trials investigating unique disease modifying therapies in AD are expected to severely tax the clinical trial community's ability to provide the participants needed to move promising compounds forward in the drug approval process 4, 5. Delays in such scientific and medical advancement will significantly hinder our abilities to impact the economic, societal, and individual burdens of AD that threaten the healthcare system today. This threat to the healthcare system is expected to increase with the growth of the population and maturation of the "baby boomers" as they enter the age where they will experience an exponential increase in risk of AD. Lessening the "bottleneck" of inefficient recruitment strategies is a goal that is imperative if we hope to bring today's experimental disease modifying strategies into common use to avert the healthcare disaster the future of AD care will bring 4.

While most studies published on recruitment strategies for AD research have focused on modifying factors intrinsic to the study itself, few have focused on the differential effects of competing recruitment strategies for clinical research recruitment success 1. Elley and colleagues 10 investigated direct primary practice waiting room contact vs. mail contact efforts in recruiting target populations at risk for falls. Their results showed improved recruitment success with direct subject contact in the waiting room (58 vs. 40% in the mail arm). However, this difference in approach was offset by the time efficiency of mailings for recruitment over direct subject contact. Neither method was shown to be superior, overall, with both showing excellent recruitment success for this minimal risk protocol. Similar results were obtained in a study related to screening mammography in southern California 14. Another study compared direct mailing to paid television advertisement and demonstrated that direct mailings were both more cost- and recruitment-success effective 12. Other findings regarding the success of direct mailings have been reported for recruitment of minority groups in a diabetes prevention study 17. Another study investigated newspaper advertisement vs. television vs. family/friend referral and found that newspaper advertisement was superior in recruiting young non-minority women to a novel cervical cancer screening trial 15. Further, another study found that mail-in flyers and physician referrals from sub-specialty GI clinics were more effective than media-based advertising for the recruitment of young adults with irritable bowel syndrome 9. Studies investigating congestive heart failure and asthma found that flyers and healthcare professional referrals were optimal sources of recruitment 11. Clearly, the existing data are somewhat contradictory and shed little light on the effectiveness of specific recruitment strategies in AD research.

The conceptual framework leading to the design of this 'head-to-head' trial of recruitment methods is based on an appreciation of the "clinical research triad". This concept recognizes that there are three potential components to successful research recruitment: the potential participant (and immediate family), the investigational team, and the primary care physician (Figure 1). All three components must work together to make research a success in any setting with any health condition. Barriers to research presented by any one of these components could reduce recruitment. Our experience is that recruitment of participants directly from the principal investigator's (PI) practice is almost 100% successful, removing this consideration from the present comparison. Our hypothesis was that the barriers to successful recruitment for AD clinical trial research would involve either the potential participant or the potential

referring health professional, and that targeting recruitment to these specific agents would help identify both the major barriers to recruitment success and identify successful recruitment strategies for engaging the clinical research triad in effective and productive research participation in AD. The present study was designed to evaluate the effectiveness of stimulating interest in clinical research study participation by targeting either the primary care health professional (PCP) or the community of interest (COE) directly with a grass-roots outreach event.

METHODS

Study Design

Direct, head-to-head, comparison of recruitment methods targeting PCPs with a continuing medical education (CME)-based event or the COE with a grass-roots outreach event.

Study Site

The University of Kentucky is one of 31 NIH/NIA funded Alzheimer's Disease Centers nationwide (UKADC). At the time of the intervention, three national clinical research trials were actively recruiting or ready to engage participants. Two projects were affiliated with the NIA-funded Alzheimer's Cooperative Study Group and one was industry sponsored. In addition, the UKADC maintains continuous active recruitment efforts for both cognitively normal and cognitively-impaired elderly subjects as part of its research focus. The ADC also assists in the active recruitment of participants for 6 ADC-affiliated studies and 8 independent local studies of the aging population (all 8 of these rely on recruitment of elderly subjects from the UKADC).

Interventions

Two independent recruitment interventions were designed to target recruitment to these clinical trials and basic science activities. Each was held within a two week period of the other, both on Saturdays with a four hour duration including a free meal (11am-3pm, May 17, 2008 for COE, and 8am-12pm, May 31, 2008 for PCP) and costs were matched between study arms (Table 1).

In one arm, a CME course was held to educate, inform, and overcome the obstacles to recruitment identified by primary care physicians in our area (PCP arm). Standard educational pre- and post-test questions assessed the efficacy of the educational aims of the intervention (see Tables 2 & 3). Recruitment obstacles were identified by the study PI (G.A. Jicha) through direct telephone or in-person informal conversations with six PCPs in the referring area regarding perceived barriers to recruitment. The format of these interviews was unstructured. From these discussions, a series of questions were designed for the pre- and post-CME evaluations, including Likert-type responses as follows: 1) Research participation by my patients will result in a greater workload for me and my staff, false/neutral/true; 2) Clinical trial participation will be helpful for my patients, false/neutral/true; 3) Clinical trial participation will potentially cause harm to my patients, false/neutral/true; 4) The likelihood that I would refer a patient to clinical trials is, low/neutral/high; and 5) I will lose patients if I refer them to a clinical trial at another institution, false/neutral/true. The barriers identified through these unstructured interviews were consistent with barriers identified by other researchers specifically focused on physicians' reluctance to enroll patients into clinical research endeavors¹⁸⁻²⁰. The CME course was specifically designed to address these issues in barriers to recruitment from PCPs. Information was provided on clinical trial design, interpretation, FDA considerations for approval of medications based on clinical trial outcomes, a review of recent clinical trial data and implications, and an extensive overview of currently recruiting and upcoming clinical trials in AD. The event was held in a local hotel/

convention/meeting center, free of charge, with a deluxe breakfast catered. Three CME credits were provided. The event was advertised through the local Alzheimer's Association, UK Physician outreach liaisons, and through a direct mailing to 300 community physicians in the area.

The second arm included a direct community outreach health fair event (COE), "Mind matters; the science and the care health fair". The event was held in the community hall of a local church with room for 300 attendees. Fourteen research teams in the area of aging and dementia were invited to participate as exhibitors. Exhibits were "hands-on" activities highlighting research activities, modeled after a children's explorium/museum. Half hour presentations by staff of the UKADC and the Alzheimer's Association alternated with viewing of educational videos on AD in one room of the community hall while the exhibitor's had ongoing activities in the great hall. Free memory screens were also offered to attendees. Lunch, snacks, and door prize giveaways were free incentives for attendance. The event was advertised through the local Alzheimer's Association, an article in the local family magazine, on a noon TV news program in a two-minute spot, and through a direct mailing to 600 community members who are on the UKADC regular mailing list.

Outcome Measures

Immediate outcome measures included a comparison of pre- and post-CME willingness to refer subjects to clinical trials in the PCP arm, and willingness to be sent information on clinical trial participation in the COE arm, although this was not a pre- and post-assessment. While the immediate outcome measures are not matched, they generally represent an immediate response in favor of clinical trial engagement in each of the study arms. Engagement in any research activities highlighted in either the PCP or COE interventions was monitored for the next 4 months to evaluate the effectiveness of these interventions in facilitating recruitment to specific clinical studies. Despite the inability to match study interventions precisely in these unique outreach settings, the selection of this uniform outcome measure (i.e. recruitment numbers reflecting success of these endeavors) ensures a uniform dependent variable for study.

Statistical Analysis

Fisher exact and chi square tests were performed on all variables in a pre- post-test paradigm for the CME evaluation in the PCP arm, and for immediate (change in attitudes toward referral for the PCP and request for information in the COE arms) and delayed response rates for recruitment into clinical trial activities between the two intervention arms. *P*-values less than 0.05 were considered significant.

RESULTS

Table 4 details the demographics of the attendees for each of the events. Age, gender distribution, and education all differed significantly between COE and PCP for attendees of these events. Occupational status of the COE attendees was not recorded. Occupational status of the PCP attendees included health care practitioners (n=24), clinical and academic faculty (n=4), student (n=2), and administrator/education coordinator (n=3) for those reporting this variable. Thirty-one of the thirty-three PCP participants serve a disadvantaged or underserved population in a federally designated HPSA (Health Professionals Shortage Area).

The CME course had 33 attendees of which 21 filled out both pre- and post-evaluation summaries included in the present analyses, although not all participants answered all questions completely. The PCP intervention showed a significant impact on all measures of the educational effectiveness of the program (Table 2). Significant shifts in perceptions of benefit to patients, workload of staff, and willingness to send patients for participation in clinical trial

activities were seen. However, we were unable to influence perceptions of potential risk to patients and fear of losing patients in these primary healthcare providers (Table 3).

The COE intervention (community health fair) attracted approximately 250 attendees. Of these 187 (75%) requested to be added to our mailing list for contact for future research opportunities and newsletters from the center. Ninety memory screens were provided as part of this event (36%). The success of the event resulted in requests for health fairs, using the same model, in three major Kentucky cities outside the Lexington area. These events are currently being planned.

Long-term outcome, defined as enrollment in any clinical research activities over the four month period following these recruitment activities, demonstrated no enrollments for the PCP arm. In contrast, 69 subjects were enrolled from the COE arm ($P<0.0001$, Fisher exact test), demonstrating superior effectiveness of this outreach approach in stimulating recruitment in our population.

DISCUSSION

These results demonstrate recruitment success using an intervention that directly targeted potential subjects, family, friends, and caregivers (COE) over the intervention that directly targeted referring health professionals (PCP). There were no identifiable barriers to recruitment recognized in the COE arm of the study. These findings further support previous data demonstrating the effectiveness of direct subject contact in enhancing recruitment success¹⁰. It is possible that the success of the COE arm in enhancing recruitment was dependent on bypassing reservations and barriers to recruitment that were seen in the PCP arm.

In contrast, while the PCP arm was effective in changing the attitudes and opinions of the targeted group in many respects (including a direct assessment of the willingness to refer patients for study participation), it was completely ineffective in accomplishing even a single recruitment to any research activity. The effectiveness of such interventions might yet be enhanced through targeting of PCP support staff rather than targeting the physicians themselves. The barriers to recruitment identified in this study included our inability to change opinions on potential risks of research participation and a perceived fear of losing patients if referred for clinical trial participation. Future efforts attempting to enhance recruitment by targeting primary healthcare professionals may prove more successful if strategies are developed to overcome these identified barriers to subject recruitment. Effective strategies to accomplish such goals could include repetitive contact and reinforcement, as the current study involved a single event intervention. The transient change in attitudes seen in the PCP arm in this study was clearly not sustained in the target population of referring health professionals. Increased information on potential risks and clear presentation of a favorable risk-benefit ratio are clearly needed to promote recruitment to clinical trials activities in a referring health professional population.

Novel approaches to overcome the fear of losing patients to clinician-researchers involved in clinical trial activities could include reciprocal referrals for care for individuals that are in need of such services. We have utilized this approach successfully in our rural telemedicine outreach initiative (data not shown). Patients identified in our clinical practice that do not have local healthcare providers are referred to the providers that utilize our subspecialty services. We have also adopted a policy of referring all testing and medication adjustments through the primary health professional, further reinforcing their control of the patient's healthcare status.

The present data also demonstrate the need to continue to reinforce a collaborative relationship with healthcare providers that will help reduce their staff workload and burden, rather than increasing such demands. While our intervention was effective in dissuading such notions,

75% of the PCP group believed that their personal staff burdens would increase or were unsure if this would occur prior to the educational intervention compared to 10% being unsure after the educational intervention. The initial finding reinforced the validity of our identification of this potential barrier to recruitment through the PI's initial contact with local primary care health professionals. While we cannot precisely determine whether the change in attitude shift influenced by the PCP intervention caused or contributed to the overall positive change in willingness to refer patients for study participation, it is reasonable to assume that it was at least partially responsible for the global change in attitude toward clinical trial referral observed in this study.

The observed differences in age, gender distribution, and years of education were expected, given the disparate nature of the target populations for the study. The PCP arm directly targeted active younger, more highly educated, health care professionals rather than the elder retirees targeted by the COE efforts. We were surprised that the COE event did not attract more middle-aged and younger participants, but overall expected the observed high interest and turnout from the elderly population. The COE participants were also highly educated, the majority college graduates. The recruitment success at the COE event may be at least partially due to the advanced age and educational level of the target population. It is possible that community outreach activities targeting younger or less educated populations may not prove as effective in recruiting into clinical research activities as seen in this study. Unfortunately, information regarding the racial and ethnic identities of the COE participants were not collected, preventing an assessment of the direct impact of recruitment strategies on racially, ethnically, or culturally diverse persons/groups.

The weaknesses of the present study include the specific nature and design of the study interventions. It is possible that alternative recruitment targeting strategies for both the PCP and COE arm could have resulted in different outcomes. While CME courses that focused on clinical trial participation may not be effective in achieving overall recruitment goals by targeting the PCP, it is possible that direct physician- to- physician contact, repetitive contact, or other strategies may have been more successful. It is also possible that courses covering different topics or approaching the issues in different ways may show benefit, although we think this is unlikely given the overall educational effectiveness of the presented program detailed in Table 2.

Another inherent weakness lies in the imbalance between the actual number of participants in each outreach activity. This may reflect the different advertisement and promotional outreach for each event. Direct mailings of invitations for the PCP event (n=300) were only half that in the COE event (n=600). The COE promotion also included a television spot and article in a family magazine that was not included in the PCP promotion, and this may have influenced the absolute number of attendees for each event. Despite this imbalance, the more limited number of PCP attendees actually care for a larger number of normal elderly and persons with AD than attended the COE program (n=4, 538 vs. n=250), suggesting that the magnitude of effect of each intervention should have favored the PCP arm 18-fold. This was clearly not the case for the main outcome measure of recruitment into clinical trials activities.

The present study outlines a framework for the rational evaluation of recruitment strategies for AD clinical research trials that has not been previously explored in the literature. While past studies have relied on marketing groups and consultants that have extrapolated on work done in other spheres, it is clearly time to begin to evaluate the effectiveness of such interventions using rigorous scientific methodology. Optimizing recruitment for clinical research trials in AD is clearly a work in progress. Shared discoveries in this area, as presented, will facilitate future AD trial recruitment efforts and ultimately propel AD drug approval forward as we move closer to a cure for this devastating disease.

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REFERENCES

1. Dowling GA, Wiener CL. Roadblocks encountered in recruiting patients for a study of sleep disruption in Alzheimer's disease. *Image J Nurs Sch* 1997;29(1):59–64. Spring. [PubMed: 9127542]
2. Hendrie HC. Lessons learned from international comparative crosscultural studies on dementia. *Am J Geriatr Psychiatry* Jun;2006 14(6):480–488. [PubMed: 16731716]
3. Macias FM, Ramsay RE, Rowan AJ. Recruitment and retention in clinical trials of the elderly. *Int Rev Neurobiol* 2007;81:265–272. [PubMed: 17433930]
4. Schneider LS. Drug development, clinical trials, cultural heterogeneity in Alzheimer disease: the need for pro-active recruitment. *Alzheimer Dis Assoc Disord* Oct-Dec;2005 19(4):279–283. [PubMed: 16327360]
5. Treves TA, Verchovsky R, Klimovitsky S, Korczyn AD. Recruitment rate to drug trials for dementia of the Alzheimer type. *Alzheimer Dis Assoc Disord* Oct-Dec;2000 14(4):209–211. [PubMed: 11186598]
6. Wrobel AJ, Shapiro NE. Conducting research with urban elders: issues of recruitment, data collection, and home visits. *Alzheimer Dis Assoc Disord* Apr-Jun;1999 13(Suppl 1):S34–38. [PubMed: 10369516]
7. Williams DE, Vitiello MV, Ries RK, Bokan J, Prinz PN. Successful recruitment of elderly community-dwelling subjects for Alzheimer's disease research. *J Gerontol* May;1988 43(3):M69–74. [PubMed: 3361090]
8. Campbell MK, Snowdon C, Francis D, et al. Recruitment to randomised trials: strategies for trial enrollment and participation study. The STEPS study. *Health Technol Assess* Nov;2007 11(48):iii, ix–105.
9. Chin Feman SP, Nguyen LT, Quilty MT, et al. Effectiveness of recruitment in clinical trials: an analysis of methods used in a trial for irritable bowel syndrome patients. *Contemp Clin Trials* Mar;2008 29(2): 241–251. [PubMed: 17919993]
10. Elley CR, Robertson MC, Kerse NM, et al. Falls Assessment Clinical Trial (FACT): design, interventions, recruitment strategies and participant characteristics. *BMC Public Health* 2007;7:185. [PubMed: 17662156]
11. Galbreath AD, Smith B, Wood P, Forkner E, Peters JI. Cumulative recruitment experience in two large single-center randomized, controlled clinical trials. *Contemp Clin Trials* May;2008 29(3):335–342. [PubMed: 18032118]
12. Hinshaw LB, Jackson SA, Chen MY. Direct mailing was a successful recruitment strategy for a lung-cancer screening trial. *J Clin Epidemiol* Aug;2007 60(8):853–857. [PubMed: 17606183]
13. Peck LE, Sharpe PA, Burroughs EL, Granner ML. Recruitment strategies and costs for a community-based physical activity program. *Health Promot Pract* Apr;2008 9(2):191–198. [PubMed: 17494948]
14. Robins Sadler G, Olson LK, Krause AS, et al. Recruiting older women to research studies: the san diego cooperative mammography project. *Breast Dis* 2001;13:33–40. [PubMed: 15687620]
15. Shuhatovich OM, Sharman MP, Mirabal YN, Earle NR, Follen M, Basen-Engquist K. Participant recruitment and motivation for participation in optical technology for cervical cancer screening research trials. *Gynecol Oncol* Dec;2005 99(3 Suppl 1):S226–231. [PubMed: 16143374]
16. Veenhof C, Dekker J, Bijlsma JW, van den Ende CH. Influence of various recruitment strategies on the study population and outcome of a randomized controlled trial involving patients with osteoarthritis of the hip or knee. *Arthritis Rheum* Jun 15;2005 53(3):375–382. [PubMed: 15934129]
17. Yancey AK, Ortega AN, Kumanyika SK. Effective recruitment and retention of minority research participants. *Annu Rev Public Health* 2006;27:1–28. [PubMed: 16533107]
18. Rahman M, Morita S, Fukui T, Sakamoto J. Physicians' reasons for not entering their patients in a randomized controlled trial in japan. *Tohoku J. Exp. Med* 2004;203:105–109. [PubMed: 15212145]

19. Ross S, Grant A, Counsell C, et al. Barriers to participation in randomized controlled trials: a systematic review. *J Clin Epidemiol* 1999;52:1143–1156. [PubMed: 10580777]
20. Taylor KM, Margolese RG, Soskolne CL. Physicians' reasons for not entering eligible patients in a randomized clinical trial of surgery for breast cancer. *N Engl J Med* 1984;310:1363–1367. [PubMed: 6717508]

Figure 1.

Our conceptualization of the “clinical research triad”. All three components must be in agreement and work in coordination to ensure research success. Barriers to research can come from anyone of the three components of this critical triad, although barriers in one arm may be overcome by efforts from another.

Table 1

Comparative costs and breakdown of expenditures for the primary care health professional (PCP) or the community of interest (COE) outreach events

Primary care provider (PCP) outreach CME course on clinical trials in Alzheimer's Disease		Community of interest (COE) direct outreach health fair event	
Expenses	Amount	Expenses	Amount
Brochures,flyers-printing, postage, Kinkos 60 booklets	\$492.40	Signage (banners, signs)	\$438.50
Hotel (food/bev/room rental) AV (tech and equipment)	\$1,355.40 \$620.00	Space, Church Community Hall Rental Food and Beverages	\$80.00 \$1,522.00
Continuing Education Costs Nursing CME Social Work-(free)	\$105.00 \$800.00	Promotional Give-Aways: Pill boxes, Key chains, Vinyl cases w/mirrors, T-shirts	\$1,766.90
TOTAL	\$3,372.80	TOTAL	\$3,807.40
Cost per participant involved (n=33)	\$102.20	Cost per participant involved (n=250)	\$15.23
Cost per participant recruited (n=0)	>\$3,372.80	Cost per participant recruited (n=69)	\$55.18

Pre- and post-test evaluations demonstrated the effectiveness of our educational program (data represent number of respondents in each category; *P*-values based on Chi-square analyses)

Table 2

After the conclusion of this program participants will be able to:		Poor	Average	Excellent	<i>P</i> -value (χ^2)
Describe clinical trial study designs.	Before	12	8	1	<i>P</i> <0.0001
	After	0	12	9	
Discuss the FDA outcome criteria from the clinical trials.	Before	12	9	0	<i>P</i> <0.0001
	After	0	14	7	
Explain published Alzheimer's disease clinical trial data to their patients.	Before	12	9	0	<i>P</i> <0.0001
	After	0	13	8	
Interpret clinical trial measures to improve quality of care for patients.	Before	13	8	0	<i>P</i> <0.0001
	After	1	13	7	
Evaluate the outcome of the therapeutic interventions in your patients.	Before	7	14	0	<i>P</i> <0.0001
	After	0	14	7	

Table 3

Effect on perceived barriers to recruitment (data represent number of respondents in each category; *P*-values based on Chi-square analyses)

My views on clinical trial participation for my patients		Useless	Unsure	Helpful	<i>P</i> -value
I view clinical trial participation for my patients as:	Before	0	11	10	<i>P</i> =0.02
	After	0	3	18	
Involvement of my patients in clinical trials will make more work for me and my staff	Before	True	Unsure	False	<i>P</i> =0.0003
	After	5	9	5	
Experimental agents for Alzheimer's disease will harm rather than help my patients	Before	False	Unsure	True	<i>P</i> =0.75
	After	0	2	17	
My patients will leave my practice if they participate in a clinical trial with another physician	Before	False	Unsure	True	<i>P</i> =0.20
	After	9	0	1	
The likelihood that I would refer patients to a clinical trial is	Before	Low	Unsure	High	<i>P</i> =0.032
	After	10	4	1	

Table 4

Age, gender and education differed significantly between the attendees of the COE and PCP events

Demographic variable	Community of interest (COE) direct outreach health fair event	Primary care provider (PCP) outreach CME course on clinical trials in Alzheimer's Disease	p-value
Age (mean years $\pm$ s.d)	69.3 $\pm$ 10.5	52.6 $\pm$ 12.6	2.6 $\times$ 10 ⁻⁸ [†]
Gender (M:F)	22:51	10:11	0.001 [‡]
Education (mean years $\pm$ s.d)	15.4 $\pm$ 3.1	17.9 $\pm$ 3.1	0.0003 [†]

[†] Student's t-test

[‡] Chi-square test