



THE AGA KHAN UNIVERSITY

eCommons@AKU

Section of Internal Medicine

Department of Medicine

December 2012

What method of contact works best for recruiting participants in a study: lessons for health care researchers?

Romania Iqbal
Aga Khan University

Ali Haroon
Aga Khan University, ali.haroon@aku.edu

Abdul Jabbar
Aga Khan University

Neelofar Babar
Aga Khan University

Rahat Qureshi
Aga Khan University, rahat.qureshi@aku.edu

Follow this and additional works at: https://ecommons.aku.edu/pakistan_fhs_mc_med_intern_med

 Part of the [Internal Medicine Commons](#)

Recommended Citation

Iqbal, R., Haroon, A., Jabbar, A., Babar, N., Qureshi, R. (2012). What method of contact works best for recruiting participants in a study: lessons for health care researchers?. *Journal of Pakistan Medical Association*, 62(12), 1293-1297.

Available at: https://ecommons.aku.edu/pakistan_fhs_mc_med_intern_med/106

What method of contact works best for recruiting participants in a study: lessons for health care researchers?

Romana Iqbal,¹ Ali Haroon,² Abdul Jabbar,³ Neelofar Babar,⁴ Rahat Qureshi⁵

Departments of Medicine,^{1,3} Department of Community Health Sciences,² Department of Gynecology and Obstetrics,^{4,5}
Aga Khan University, Karachi, Pakistan.

Corresponding Author: Romaina Iqbal. Email: romaina.iqbal@aku.edu

Abstract

Objectives: To assess the various recruitment strategies used by medical researchers and their response rates.

Methods: The observational study, part of a larger retrospective cohort, was done at the Aga Khan University Hospital, Karachi, Pakistan, from May 2008-December 2010, covering a period from 1999 to 2005. We used a multi-mode contact approach for including participants in the study. This comprised an invitational letter that described the study sent along with a mail-back, postage-paid envelope and multiple phone calls for recruitment of participants. The response to each mode was noted and described as frequency and percentage.

Results: There were 1335 participants eligible for recruitment in the study. Of them, 1247 (93.4%) were sent mail-outs to which only 84 (6.7%) responded. Besides, 1133 participants, whose phone numbers were available, were called. Overall, the number of people that we were able to contact was low. The response to postage paid mail was very poor whereas the majority of participants were contacted via phone calls. Out of such participants, 257 (19.25%) agreed to participate at the very first call and our results suggest that more than three calls made very little contribution to the consent rate.

Conclusion: Recruiting subjects from contact information available in the medical records may not be the best method. Multiple and innovative approaches are required for approaching potential participants and requesting them to participate in a study.

Keywords: Medical researches, Study volunteers, Multi-mode contact. (JPMA 62: 1293; 2012)

In our setting, to the best of our knowledge, no one has assessed the utility of employing different recruitment modes and its outcome. The aim of the present study was to compare mail versus telephone modes for contacting potential participants for a study conducted in Karachi, Pakistan.

Material and Methods

This study was part of a larger retrospective cohort study being conducted to assess the incidence of type II Diabetes Mellitus (DM) in women with a history of Gestational Diabetes Mellitus (GDM) who delivered at the Aga Khan University Hospital (AKUH) Karachi, Pakistan from May 2008 to December 2010. AKUH is a tertiary care hospital. On the first visit to AKUH, all individuals are registered and a medical record is created for each subject. All physicians and other relevant healthcare professionals write their notes related to each visit in the medical record file. The list of potential participants for the study was generated from the medical records of women identified as having GDM between 1995 and 2005 at AKUH. International Classification of Diseases (ICD) 10 code for GDM was used for generating the list of GDM women from the medical records stored at AKUH.

All women identified as having GDM between 1999-2005 were eligible to participate except for non-Pakistani women, women with incomplete information in medical records related to their pregnancy in which they had GDM, and women who could not speak Urdu.

After collecting information from the medical records, we divided the participants into yearly batches on the basis of the year in which women had developed GDM. We used a multi-mode strategy for recruiting participants in the study. The protocol for recruitment involved mail-outs as well as telephone calls to all potential participants. Mailing addresses as well as telephone contact information was obtained from the medical records. First, an invitation letter describing the study objectives and procedures and a consent form was mailed out to all the potential participants along with a pre-paid, self-addressed mail-back envelope. The potential participants were expected to fill the attached consent form and mail it back. These letters were mailed to potential participants for whom we had complete mailing addresses. In addition to the mail-outs, all potential participants were contacted via phone as well to request participation in the study. This was done one week after completing the mail-outs. Phone calls were made to all the potential participants regardless of the outcome of the mail sent earlier. The same year-of-diagnosis sequence was followed for phone calls as observed for the mail-outs i.e. women diagnosed with GDM in 1999 were contacted first, followed by women in 2000 and so on. To maximise

recruitment in the study, at least 3 phone calls were made per potential participant in case the contact could not be established in the first call. In cases where the participants were indecisive about their participation, or not available, two more calls were also made. The initial call was made in the afternoon of weekdays while the second was made in the morning hours of weekdays, and the third call was made on the weekends. The timing of the calls was varied to maximise the recruitment of potential participants. In cases where the potential participant, refused to participate no further calls were made. A structured/standardised interview was carried out over the phone to elicit information from the potential study participants. Trained research staff mailed out the letters and conducted interviews over the phone. Participants who consented were requested to visit AKUH for a face-to-face interview and blood sample collection. We did not carry out any detailed statistical analysis and report our results simply as frequencies and percentages.

The study was approved by the Ethics Review Committee of the institution. For comparing mailing strategy against telephone or cellular contact, we assessed recruitment as well as contact status of participants. We noted overall number of participants that were contacted and number that consented as well as numbers that were contacted and consented stratified by year of GDM diagnosis.

Results

Out of 1335 potential participants identified from the medical records, we were able to send mails to 1247 (93.4%) participants. For the remaining 88 individuals, we were unable to find addresses or they had moved out of Karachi. Only 84 (6.7%) individuals responded the mail-outs, while 336 (26.9%) mails returned due to wrong addresses, and 824 (66.1%) individuals did not respond to

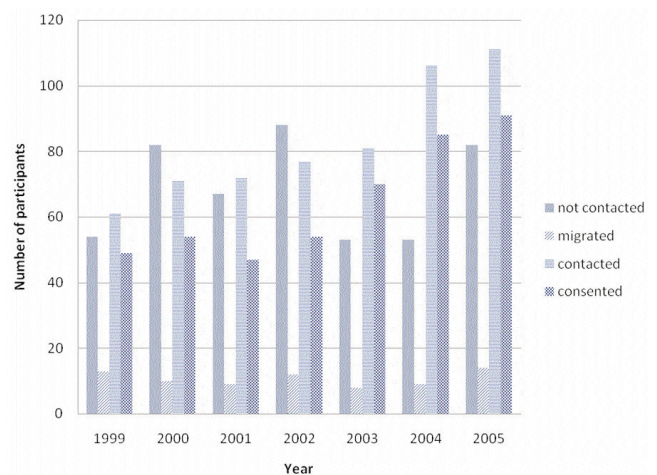


Figure-1: Recruitment status of participants by year of Gestational Diabetes Mellitus diagnosis.

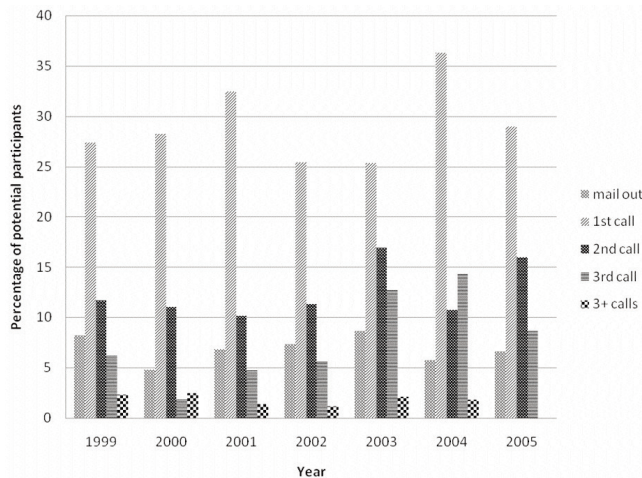


Figure-2: Contact status of participants by mode of contact and year of diagnosis.

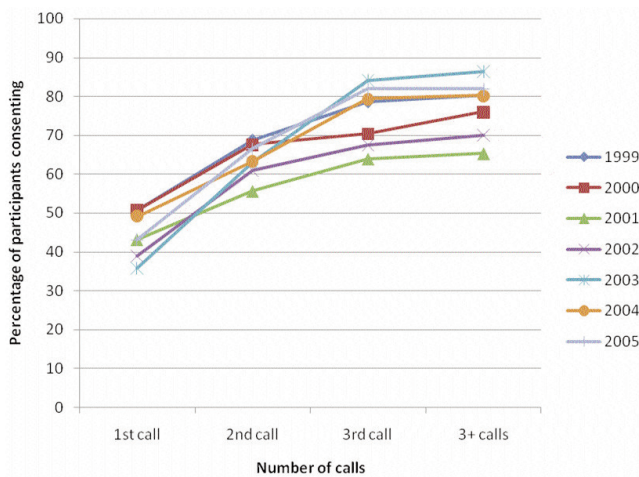


Figure-3: Percentage of participants consenting with subsequent calls by year of diagnosis.

the mail-out. From the medical records, we obtained phone numbers of all of the potential participants, and were able to call at the residences of 1133 women. We were unable to establish contact with 479 (42.3%) cases.

Overall we were able to contact 579 (43.4%) women. The highest number of potential participants contacted related to 2005. The highest number of women that we could not contact related to 2002 (Figure-1). A small number of potential participants had also migrated to other places.

A small proportion of participants were contacted via mail-outs while the majority of participants were contacted via phone calls (Figure-2). Furthermore, the highest percentage of participants was contacted in the first call in all years of GDM pregnancy followed by the second call in all years. More than three calls to a household for contacting a potential participant were the least effective in

contacting potential participants in all years of GDM pregnancy. We did not observe any trend in the percentage of participants contacted by any call when split by year of GDM pregnancy, indicating that the year of GDM pregnancy did not have any effect on the response rate.

The overall consent of the study was 90.4% (76 out of 84) for mail and 77.7% (450 out of 579) for telephone calls (Figure-3).

Discussion

Recruiting potential candidates in a retrospective study is a major issue in many studies and we could not find literature about experiences in a developing country. In these setups where primary and secondary care models are not well-organised, designing studies and recruiting participants is very difficult as there are no database setup and rapport between patients and healthcare centre is on as-per-need basis rather than regular visits to the same centre or healthcare provider.

In our study, we observed very poor contact and consent rates for recruiting participants in a retrospective cohort study. Mail-outs with pre-paid mail-back envelopes for recruiting potential participants in the study was the least effective method. A large number of potential participants did not reply to our mails. Other studies have also reported low response rates to mails when compared with phone calls.³ Furthermore, a large number of letters were returned to us owing to wrong mailing addresses. Unlike the West, where several means can be used for obtaining addresses of potential participants, we were unable to verify the addresses against another source of information such as the web etc.⁴ Also in other studies, more than 1 attempt is made for contacting potential participants by mail.⁵ In our study we did not follow up the mail out with another mail. Additionally, some mail surveys have offered incentives to improve participation in the study though the magnitude of the incentive has not been found to be associated with improved participation.⁶ In our study we did not offer any incentive to potential participants which may have led to low participation in the study.

Our study clearly demonstrated the superiority of the telephone method as many of our patients were not educated and in general the reliability of postal mail is questioned by most people. Besides, the telephone approach gives a personal touch to contacts and is helpful in getting consent for participation. In a study conducted in the West, non-response to a survey was minimised by increasing the number of calls to 5 for each potential participant and changing the study protocol.⁷ In our study we observed that more than three calls did not lead to increase in response to the study. If the contact and consent rates are compared, it appears that in such

settings, mail-first method is not cost-effective. Harris et al⁸ also reported that contacting person while they are in hospital and informing them of any post-discharge follow-up for survey more than doubled the response rate. With the increasing use and availability of telephone, particularly cell phone, in future the best method of contacting would be calling on cell phone or, in a more polite way, one may use text messaging to contact the participants. Several studies have reported differences in responding to questions asked through phone interview against those responded in a mailed questionnaire.^{9,10} We did not use phone or mail-outs as a means of collecting study data.

We failed to contact a large number of potential participants directly. Consequently, the consent rate was also low for the study. Potential determinants of non-participation have been studied by several investigators and have revealed a number of factors that may be associated with low participation. These factors include age¹¹ gender,¹² occupational status,¹³ socio-economic status, educational status¹⁴ life style factors¹⁵ health status¹⁶ and methodological factors including the use of incentives,¹⁷ registered mailing¹⁸ and others.¹⁹

It may be possible that our consent rate was low because of the nature of the study. All potential participants were requested to visit the AKUH for a detailed interview and blood work. Not all subjects were willing to spare time for this activity. It is likely that home visits for collection of data may have raised the consent rate due to ease for the subjects for participation in the study. Lower consent rates for mail-out surveys have been reported in a study in which both, mail-out surveys as well as home visits for interviews were carried out, indicating that home visits for data collection may be a superior method.²⁰ Subjects had to be able to come to the study centre located within the city. The average travel distance was about 10 to 15km which appears to be long for the female population, especially when using public transport or not being accompanied by male family members. Several investigations have found an association between the distance of the healthcare centre from an individual's home and less healthcare utilization.^{21,22}

Although we offered appointments for the health examination on days suitable for the participants (including Saturdays and Sundays), the average duration of health examination and the filling of questionnaire by the investigator was two hours, and this may have kept women away from participating in the study who have to take care of household chores.

As opposed to mail-out, the response to phone calls was better, indicating that in this electronic age, even in a developing country, phone calls are an important means to contact. Besides, as it makes a two-way live contact,

expressing concerns and answering those queries is immediate and may have a major impact on patient's willingness to come to the centre and later in giving consent for the study.

Conclusion

Mail-outs were not an effective means of recruiting participants in a retrospective cohort study compared to the phone calls. Besides, participants who had a pregnancy/delivery recently at AKUH were more easily contacted compared to participants who had an older delivery date.

References

- Lobdell DT, Buck GM, Weiner JM, Merdola P. Using commercial telephone directories to obtain a population-based sample for mail survey of women of reproductive age. *Paediatr Perinat Epidemiol* 2003; 17: 294-301.
- Jhun HJ, Ju YS, Kim JB, Kim JK. Present status and self-reported diseases of the Korean atomic bomb survivors: a mail questionnaire survey. *Med Confl Surviv* 2005; 21: 230-6.
- Siemiatycki J. A comparison of mail, telephone, and home interview strategies for household health surveys. *Am J Public Health* 1979; 69: 238-45.
- Link MW, Mokdad AH. Alternative modes for health surveillance surveys: an experiment with web, mail, and telephone. *Epidemiol* 2005; 16: 701-4.
- Kiezebrink K, Slane PW, Power K, Wrieden WL, Swansoh V, Irvine I, ET AL. Strategies for achieving a high response rate in a home interview survey. *BMC Med Res Methodol* 2009; 9: 46.
- VanGeest JB, Wynia MK, Wilson IB, Cummins DS. Effects of different monetary incentives on the return rate of a national mail survey of physicians. *Med Care* 2001; 39: 197-201.
- Peytehev A, Baxter RK, Baxter LRC. Not all survey effort is equal. Reduction of Non-response Bias and Non response Error. *Public Opin* 2009; 73: 785-6.
- Harris LE, Weinberger M, Tierney WM. Assessing inner-city patients' hospital experiences. A controlled trial of telephone interviews versus mailed surveys. *Med Care* 1997; 35: 70-6.
- Feveile H, Olsen O, Høgh A. A randomized trial of mailed questionnaires versus telephone interviews: response patterns in a survey. *BMC Med Res Methodol* 2007; 7: 27.
- deVries H, Elliott MN, Hays RD, Keller SD, Hepmer KA. Equivalence of mail and telephone responses to the CAHPS Hospital Survey. *Health Serv Res* 2005; 40: 2120-39.
- Brogger J, Ede GE, Bakke P, Gulsvik A. Comparison of telephone and postal survey modes on respiratory symptoms and risk factors. *Am J Epidemiol* 2002; 155: 572-6.
- Etter JF, Perneger TV. Analysis of non-response bias in a mailed health survey. *J Clin Epidemiol* 1997; 50: 1123-8.
- Launer LJ, Wind AW, Deeg DJ. Nonresponse pattern and bias in a community-based cross-sectional study of cognitive functioning among the elderly. *Am J Epidemiol* 1994; 139: 803-12.
- Stang A, Moebus S, Dragano N, Beck EM, Mohlenkamp S, Schmermund A, et al. Baseline recruitment and analyses of nonresponse of the Heinz Nixdorf Recall Study: identifiability of phone numbers as the major determinant of response. *Eur J Epidemiol* 2005; 20: 489-96.
- Holt VL, Daling JR, Stergachis A, Voigt LF, Weiss NS. Results and effect of refusal recontact in a case-control study of ectopic pregnancy. *Epidemiol* 1991; 2: 375-9.
- Austin MA, Criqui MH, Barrett-Connor E, Hold Brook MJ. The effect of response bias on the odds ratio. *Am J Epidemiol* 1981; 114: 137-43.
- Perneger TV, Etter JF, Rougemont A. Randomized trial of use of a monetary incentive and a reminder card to increase the response rate to a mailed health survey. *Am J Epidemiol* 1993; 138: 714-22.
- Pedrana A, Hellard M, Giles M. Registered post achieved a higher response rate than normal mail - a randomized controlled trial. *J Clin Epidemiol* 2008; 61: 896-9.
- Ramo DE, Hall SM, Prochaska JJ. Reliability and validity of young adults

- anonymous online reports of marijuana use and thought about use. *Psychol Addict Behav* 2011, (Epub ahead).
20. Picavet HS. National health surveys by mail or home interview: effects on response. *J Epidemiol Community Health* 2001; 55: 408-13.
21. Billi JE, Pai CW, Spahlinger DA. The effect of distance to primary care physician on health care utilization and disease burden. *Health Care Manage Rev* 2007; 32: 22-9.
22. Jordan H, Roderick P, Martin D, Barnett S. Distance, rurality and the need for care: access to health services in South West England. *Int J Health Geogr* 2004; 3: 21.
-