

Green paint=addition; Red paint=delete

Effect of Mobile phone Reminders and Recalls on Pentavalent Vaccination Drop-out among Infants in a Developing City, Southeast Nigeria

Abstract

Background: Immunisation drop-out measures the effectiveness of the immunisation programme. When drop-outs exceed 10 percent it indicates a problem of utilisation of services. Receipt of vaccines at the recommended ages and intervals will ensure that children are adequately protected from target diseases at all times. Immunisation reminder and recall (RR) systems are cost-effective methods of improving adherence to recommended immunisation schedules. This study therefore determined the effect of immunisation reminders and recalls on reducing pentavalent vaccination drop-outs in Abakaliki.

Materials and Methods: This is a quasi-experimental study among caregivers of infants in rural health facilities in Abakaliki, Nigeria. Mile-Four and St. Vincent hospitals in Izzi and Ebonyi Local Government Areas (LGA) of Ebonyi State were selected purposively. Mile-Four was assigned the phone reminder/recall intervention group and St. Vincent as control group. Sample size was determined using the formula for comparing two proportions. Caregiver-child pair was enrolled into the two groups during the infants' BCG or Pentavalent vaccines 1 immunisation visit and followed till the final scheduled immunisation visit for each child. Data were collected using questionnaire forms, proforma and checklist. Statistical Package for Social Science (SPSS) version 22.0 was used for analysis. Ethical approval was obtained from the Research and Ethics Committee (REC) of the Federal Teaching Hospital Abakaliki (FETHA), Nigeria. **Results:** The mean age of respondents were 26.6 $\pm$ 4.9 years and 27.1 $\pm$ 4.2 years in the intervention and control groups respectively. Thirty five point seven percent (35.7%) of infants in pre-intervention phase dropped out of pentavalent vaccines 3 when compared with 5.5% post-intervention. This difference in their proportions was found statistically significant ($p < 0.01$). In the control group, 47.7% dropped out of pentavalent vaccines 3 at the beginning of the study when compared with 22.1% at the end of the study, a difference that was statistically significant ($p = 0.02$). Out of 145 infants who received pentavalent vaccines 1 in both groups, 137 (94.5%) infants received pentavalent vaccines 3 in the intervention group while 113 (77.9%) infants received pentavalent vaccines 3 in the control group. Far distance to health facility predicted of immunisation drop-out in the control group. It is 2.8 times more likely to cause immunisation drop-out than near distance to health facility. No predictor was found in the intervention group.

Comment [DS1]: this singular observation would always remind researcher to compare, as I observed and showed in subsequent sections, to compare drop-out rates between the intervention and control group since without intervention (reminders and recalls) a significant difference was observed at the end of the study within the control group. The appropriate analysis for this I did and showed below. so show effect of intervention by comparing both intervention and control groups.

Comment [DS2]: yes, in unison with the above comments, here you correctly compared rate of pentavalent vaccine receipts among the 2 groups and showed that the vaccine receipt was higher (and actually significantly higher, $p = 0.001$, I did it) than in control group. therefore, you need to reflect same for rates of drop-out between the intervention and control groups. this I have solved below anyway.

Comment [DS3]: it is scientifically desirable to reflect corresponding result for intervention group.

Comment [DS4]: it is better to state the result for intervention group, readers would want to know this in particular.

Comment [DS5]: your results section does not show this, so it is still invalid here.

Conclusion: Mobile phone reminders and recall has proven very effective in reducing pentavalent vaccines drop-outs in Abakaliki. Implementation of immunisation reminders and recall systems are therefore strongly recommended in immunisation clinics in developing countries especially in Nigeria for improved immunisation coverage in order to achieve SDG 3.

Keywords: Mobile phone reminders and recall, pentavalent vaccination drop-out, Abakaliki

Introduction

Immunisation drop-out and coverage rates at primary health care (PHC) level indicate the level at which communities utilize the preventive services and thus serve as a measure of the strength of the public health system. They also measure the effectiveness of the immunisation programme¹. Immunisation drop-outs refer to infants who have used or missed immunisation services and do not return for subsequent vaccinations. When drop-outs exceed 10 percent, it indicates a problem of utilisation of services. In most settings where full immunisation coverage is low, most infants receive at least one dose of Pentavalent vaccines, but the proportion that receive the needed second and third doses drops significantly. Drop-out rates are calculated as the percentage point difference between successive doses of a vaccine, expressed as a percentage of the first dose¹.

Immunisation reminder and recall (RR) systems are cost-effective methods whereby infants who had come for vaccination but fail to continue or come for subsequent vaccinations are identified and contacted to come to the immunisation clinic or physician's office for its completion. It is a cost-effective method of improving adherence to recommended immunisation schedules^{2,3}. Reminder system tracks future immunisation appointments, whereas recall system tracks missed immunisation appointments and prompts clients to return to the clinic to catch up on needed overdue immunisations². A "reminder" is the postcard, letter, short message services [SMS] or telephone call reminding clients of immunisations before they are due. A "recall" is the postcard, letter, short message services SMS or telephone call after clients miss an immunisation appointment or when an individual has fallen behind on scheduled immunizations prompting them to return to the clinic to receive the recommended immunisations⁴. Health care services that require repeated visits to the health facility due to timed scheduling of care are faced with the challenges of poor compliance and attrition. Clients receiving such care could and indeed have to be reminded by mobile phone calls which have great potential for improving compliance with or adherence to childhood immunisation schedules as the number of subscribers increase. Immunisation reminder and recall (RR) systems are cost-effective methods of improving

Comment [DS6]: the conclusion I suggested below (in the conclusion section of the manuscript) is better here.

Comment [DS7]: I suggest use of "immunization" and "immunize" throughout the manuscript

Comment [DS8]: I suggest "utilization" and "utilize" throughout the manuscript

72 adherence to recommended immunisation schedules^{1,2}. Different methods exist such as chart
73 reminders, mail reminders, postcards, telephone calls, short message service (SMS), home
74 visits, computerised immunisation alert systems, standing orders, expanding clinic hours,
75 card file and clinical assessment software application (CASA). However, no one method suits
76 all facilities. The appropriateness of a method is dependent upon personnel's capacity to
77 utilise the selected method and fine-tune it to meet the specific needs of the practice and
78 locale.

79 Abakaliki (study area) has large number of rural dwellers with low level of formal education
80 and this has been found to be one of the factors influencing immunisation uptake with
81 decreasing expectations about the performance of primary health care system. Consequently
82 low immunisation coverage and high childhood immunisation drop-out rate are the attendant
83 health problems⁵. Effective communication is therefore imperative for the delivery and
84 receipt of adequate maternal and child health care services especially in such areas⁶. This
85 study therefore determined the effect of immunisation reminders and recalls on pentavalent
86 vaccines drop-outs in Abakaliki.

87 **Materials and Methods:** This is a quasi-experimental study among mothers/caregivers
88 accessing childhood immunisation services at Mile-Four Hospital and St.Vincent Hospital
89 Ndubia, all in Abakalki. The minimum sample size was determined using the formula for
90 comparing two proportions^{7,8}. Respondents were selected using systematic sampling
91 technique. The reminders and recalls were given to parents/caregivers in the intervention
92 group. The intervention consisted of immunisation reminders to keep future immunisation
93 dates and immunisation recalls for missed immunisation dates. Phone calls were made 48-24
94 hours prior to next appointment date reminding the parents/caregivers that immunisation date
95 for a named child was that date at the intervention facility. One month (4 weeks) after the
96 last recall following missed 3rd dose of penta-valent vaccines, data on immunisation drop-out
97 was extracted from immunisation register and checklist into the proforma for data entry into
98 SPSS. Other relevant data were collected using questionnaire forms, proforma and checklist.
99 Chi-squared test was used to determine association or differences between proportion of the
100 variables and the level of statistical significance was set at $p < 0.05$ and confidence level at
101 95%. Ethical approval for this study was obtained from the Research and Ethics Committee
102 (REC) of the Federal Teaching Hospital Abakaliki (FETHA), Ebonyi State, Nigeria.

103 **Results:** The mean age of respondents (parents/caregivers) were 26.6 ± 4.9 years and
104 27.1 ± 4.2 years in the intervention and control groups respectively. The difference in the
105 proportion for gender in the two groups was not statistically significant ($p=0.90$).

Comment [DS9]: This is a repetition, see lines 58 and 59, so delete it and harmonize the references as they are different.

Comment [DS10]: Delete, it is a repetition

Comment [DS11]: Delete

Comment [DS12]: I suggest "computerized"

Comment [DS13]: From the results, one finds it difficult reconciling terms used to present results in the Tables; for instance the pre-intervention, post-intervention (intervention group); and beginning and end of study (control group). It is important you clearly articulate what these terms mean and how you conducted/measured these in methods section, otherwise, they are difficult to grasp.

Comment [DS14]: this might not be right, for the quasi-experimental design, systematic sampling is not appropriate, the purposive sampling you stated in the abstract is apt, you may wish to change this here.

Comment [DS15]: I expect this section to also show number of respondents reminded and number of respondents recalled; for clarity of purpose.

Comment [DS16]: It is very important to first state the sizes (n1 and n2) of intervention and control groups before any other data.

106 In Table 2, high proportions of the infants were in the age group of 0-2 weeks, a difference
107 that was not significant (p=0.31).

108 Table 3 shows that more females (6.9%) than male infants (4.1%) had immunisation drop-
109 outs in the intervention group. More female infants also had immunisation drop-outs in the
110 control group. The difference in their proportions was not significant (p>0.05).

111 Table 4 below shows the proportion of respondents who dropped-out of OPV3, Pentavalent
112 vaccines 3 and PCV3 in pre- and post-intervention phases when compared with those in the
113 beginning and end of study in the control group. Thirty five point seven percent (35.7%) of
114 infants in pre-intervention phase dropped out of pentavalent vaccines 3 when compared with
115 5.5% post-intervention. This difference in their proportions was found statistically significant
116 (p<0.01). In the control group, 47.7% dropped out of pentavalent vaccines 3 at the beginning
117 of the study when compared with 22.1% at the end of the study, a difference that was
118 statistically significant (p=0.02). Out of 145 infants who received Pentavalent vaccines 1 in
119 both groups, 137 (94.5%) infants received Pentavalent vaccines 3 in the intervention group
120 while 113 infants received Pentavalent vaccines 3 in the control group.

121 In Table 5 below, far distance to health facility was a predictor of immunisation drop-out in
122 the control group. It is 2.8 times more likely to cause immunisation drop-out than near
123 distance to health facility.

124 **Table 1: Socio-demographic characteristics of respondents in the study and control**
125 **groups**

Variables	Intervention (n=145) Freq. (%)	Control (n=145) Freq. (%)	χ^2	p-value
Sex				
Male	5 (3.4)	4 (2.8)	FT	0.73
Female	140 (96.6)	141 (97.2)		
Age group (years)				
15-19	11 (7.6)	9 (6.2)	6.38	0.16
20-24	50 (34.5)	37 (25.5)		
25-29	48 (33.1)	68 (46.9)		
30-39	36 (24.8)	31 (21.4)		
Marital status				
Married	137 (94.5)	134 (92.4)	2.44	0.69
Single	8 (5.5)	11 (7.5)		
Education				

Comment [DS17]: No reference to Table 1 before Table 2; if Table 1 is not relevant, delete it; but I think it is relevant, so make appropriate reference to it.

Primary	10 (6.8)	17 (11.7)	3.67	0.15
Secondary	88 (60.7)	93 (64.1)		
Tertiary	47 (32.4)	35 (24.1)		
Employment				
Paid employment	25 (17.2)	21 (14.5)	2.75	0.25
Self employment	56 (38.6)	70 (48.3)		
Unemployed	64 (44.1)	54 (37.2)		
Religion				
Christianity	142 (97.9)	143 (98.6)	FT	1.00
Others	3 (2.1)	2 (1.4)		

FT= Fisher's exact test

Table 2: Socio-demographic characteristics of infants in the study and control groups

Variables	Intervention (n=145) Freq. (%)	Control (n=145) Freq. (%)	χ^2	p-value
Sex				
Male	73 (50.3)	72 (49.7)	0.01	0.90
Female	72 (49.7)	73 (50.3)		
Age group (weeks)				
0-2	103 (71.0)	93 (64.2)	3.43	0.31
3-5	21 (14.5)	26 (17.9)		
6-8	21 (14.5)	26 (17.9)		
Vaccines received at recruitment				
BCG, OPV0, HB0	125 (86.2)	121 (83.4)	0.42	0.51
OPV1, PENTA1, PCV1	20 (13.8)	24 (16.6)		

Table 3: Within group comparison between Sex of infants and immunisation drop-out post-intervention

Comment [DS18]: why did you use different font style in Table 3? Kindly maintain consistency in font style

Variables	Intervention group (n=145)				Control group (n=145)			
	Immunisation drop-out				Immunisation drop-out			
	Yes Freq. (%)	No Freq. (%)	Total	χ^2 (p-value)	Yes Freq. (%)	No Freq. (%)	Total	χ^2 (p-value)
Sex of infants								
Male	3 (4.1)	70 (95.9)	73 (100)	FT (0.49)	15 (20.8)	57 (79.2)	72 (100)	0.12 (0.72)
Female	5 (6.9)	67 (93.1)	72 (100)		17 (23.3)	56 (76.7)	73 (100)	

FT=Fisher's exact test

Table 4: Effect of mobile phone reminders and recalls on Penta-valent vaccines drop-out pre- and post-intervention

Variables	Intervention group			Control group		
	Pre-intervention Freq. (%)	Post intervention Freq. (%)	(p-value)	Beginning of study Freq. (%)	End of study Freq. (%)	(p-value)
Number who dropped-out of vaccination						
Yes	145 (35.7)	8 (5.5)	<0.01*	134 (47.7)	32 (22.1)	
No	261 (64.3)	137 (94.5)		147 (52.3)	113 (77.9)	0.02*
Number who dropped-out of each vaccination						
OPV3	147 (36.2)	8 (5.5)	<0.01*	134 (47.7)	32 (22.1)	0.02*
Penta3	145 (35.7)	8 (5.5)	<0.01*	134 (47.7)	32 (22.1)	0.02*
PCV3	152 (37.4)	8 (5.5)	<0.001*	136 (48.4)	32 (22.1)	0.02*
Drop-out rate	64.3%	5.5%		52.3%	22.1%	0.01*

*Statistically significant. McNemar χ^2 was used for this comparison

Table 5: Predictor of immunisation drop-out post intervention

Variables	Immunisation drop-out		
	AOR	95% CI of AOR	P-value
Marital status			
Not married	1		
Married	4.31	-0.89-10.51	0.09
Educational status			
<Secondary	1		
≥Secondary	0.79	-0.39-1.61	0.59
Far distance to health facility			
No	1		
Yes	2.78	1.47-6.76	0.05**

**Predictor

Comment [DS19]: Why can't you use the same terms for both intervention and control groups? I mean why "pre-intervention" for intervention group and "beginning of study" for control group; ditto for corresponding "post-intervention" and "end of study"? These do not show comparability, except the terms are essentially the same, or explain usage of each in methods section.

Comment [DS21]: Except you make it clear, 5.5% is truly less than 35.7%, but how you got a total of 406 (145+261) that equal 100% (35.7%+64.3%) for pre-intervention respondents is puzzling; remember your previous Tables state there are 145 respondents each in intervention and control groups, ditto for infants in each group, so check this Table 4 in particular for correctness of headers and values. For instance, the total under post-intervention was correctly 145 (8+137) and end of study in control group 145 (32+113), but not so for pre-intervention and beginning of study. Even if all figures in the intervention group are added up, they are still less than 580 (145+261+8+137=551), ditto for control group (134+147+32+113); so check all values very well. In the control group as well, 134+147= 281 which is higher than 145 respondents at the beginning of the study. I submit that at any point in your Tables, the sum of subgroups must equal 145 or 290 or 580, anything different from these must have clear explanations. With the figures you stated for dropped-out of vaccines, my CHI-squared analysis with SPSS for intervention group reveals $p = 0.001$ not 0.01 as you reported, though I disagree with your values that are at variance with grand total of 290 (respondents) or 580 (respondents and infants).

Comment [DS20]: Use of "yes" and "no" here is seemingly confusing or at variance with the column header, since the column header reads "number who dropped-out" I expect to read number under the header not "yes" or "no". Kindly explain in methods section how you got "yes" and "no" and what each means. May be you need to let us know the actual questions addressed in questionnaire forms you administered. I also want to believe ... [1]

Comment [DS22]: Same here, number as header and under it, OPV3; these are at variance, if header states number then put number under it.

Comment [DS23]: you also need to re-analyze each of these, the figures do not add-up.

Comment [DS24]: how did you get this drop-out rate? And is it for the vaccines or each vaccine drop-out? check all the drop-out rates for correctness. you may wish to consult a biostatistician.

Comment [DS25]: Why does this Table show results for only control group since the Table title reads "post-intervention"? Remember, no intervention (reminder and recall) was given to control group, according to your methods except I got your methods wrong and I wish to be corrected on this; so readers would want to know corresponding results for intervention group ... [2]

Comment [DS26]: what does this mean and how did you get each value under it? your methods section needs to explain it before showing it here; or explain it below the Table.

150
151

152 Discussion

153 A significantly lower proportion of respondents in the intervention group (5.5%) dropped out
154 of vaccination when compared with the 22.1% of respondents who dropped out in the control
155 group. This difference could be explained by the persistent and consistent reminders and
156 recalls which made caregivers see the need for completion of their children's immunisation to
157 avoid vaccine preventable diseases^{9,10}. There were no reminders and recalls for the control
158 group, consequently caregivers may not have been motivated to complete the vaccine doses
159 as revealed in this study. Such pools of susceptible children have been implicated in
160 epidemics in the past¹¹. Some of the children never came back for scheduled immunisation
161 and these children might remain permanently at risk for vaccine preventable diseases. (In
162 your Abstract and Introduction sections, you stated that vaccination drop-out that exceeds
163 10% has implication, you may wish to state so for the control group with drop-out rate of
164 22.1% in this discussion section).

165 There is a significant relationship between respondent's marital status and immunisation
166 drop-outs in the intervention group. Been married has proven to be a significant predictor
167 (promoter) of immunisation completion in this study.

168 A comparable proportion of females (6.9%) and male infants (4.1%) dropped-out of
169 vaccination post intervention. Similarly, a comparable proportion of female (23.3%) and male
170 (20.8%) infants in the control group dropped-out of vaccination at the end of the study. This
171 finding is consistent with a study in Umuahia, Nigeria where the drop-out rate was virtually
172 the same for both male (51%) and female (49%)¹². Increase in drop-out rate among the
173 control group demonstrates higher risk of attack of this pool of infants by vaccine preventable
174 diseases. Low immunisation coverage puts a substantial number of children at risk of death
175 and disability from vaccine preventable diseases⁹. It therefore demonstrated equal parental
176 love and care for male and female children in the present day society.

177 It is also interesting to note that this study demonstrated average drop-out in both males and
178 females infants with that of the males being marginally lower though not statistically
179 significant. The magnitude of its public health importance cannot be over-emphasised. For
180 every child recalled for immunisation, so much has been done to prevent disease, morbidity
181 and mortality in that child, prevent disabilities as well as disease transmission to many others
182 who might have gotten infected through the child and also boosting herd immunity¹².

Comment [DS27]: Your study did not compare these values; from Table 4, you only compared drop-out rate between pre- and post-intervention subgroups under intervention group to get $p=0.01$; ditto for the control group to get $p=0.02$. the comparison of 5.5% drop-out rate in post-intervention and 22.1% drop-out rate in end of study for control group is a 2 by 2 tabular crosstab comparison (i.e. 8/145 and 32/145 for post-intervention and end of study in intervention and control groups, respectively) which I did with SPSS and arrived at $p=0.001$, indicating highly significant difference truly. but this does not reflect at all in your entire results. so stating it here is not valid, kindly correct all this and include as appropriate.

Comment [DS28]: I beg no! No such result in your Tables. In the Table 5 where I expected to see result for intervention group, you only computed results for control group and even in that, the corresponding p value for marital status is 0.09 which I think is correct as 95% CI is inclusive of zero value; this p value of 0.09 is not indicative of significant association between these variables; in methods section you stated that $p<0.05$ is indicator of statistical significance. So, kindly re-do your analyses.

Comment [DS29]: No, this is very invalid a conclusion, no such results in your study, check your Table 5 and other Tables.

Comment [DS30]: A very good analysis was left out in Table 3; this is gender-specific drop-out rate difference. I did this for female gender and observed significant difference ($p=0.006$) meaning 6.9% drop-out among females in intervention group was significantly less than the corresponding 23.3% in the control group. Ditto for males in the intervention group, the 4.1% sig less ($p=0.002$) than 20.8% in control group. Both results show that the intervention (reminders and recalls were beneficial and should be adopted and sustained).

Comment [DS31]: I do not understand inclusion of this here, you seemingly did not study this.

183 This study found mobile phone call reminders and recalls very effective in reducing
184 childhood immunisation drop-out. A Pennsylvanian pilot study using phone recall showed
185 that the health providers traced and recalled about 50% of overdue infants and brought them
186 up-to-date for immunisation¹³. A Cochrane review found that patient reminder/recall systems
187 were effective in improving immunisation rates in 33 of 41 studies. Increased immunisation
188 rates due to reminders were in the range of 5 to 20%¹.

189 A study carried out in Northwest India reported that in overall, the telephone reminder did not
190 show more effectiveness than provider recommendation as a trigger for immunisation. This is
191 due to high knowledge and awareness of importance of immunisation by caregivers even
192 without reminders in that setting. Although a higher proportion of patients immunised during
193 the project reported telephone reminder as the intervention triggering vaccine acceptance,
194 there was no significant difference in the proportion of respondents between interventions
195 (54.89% of patients reported telephone reminder, 45.11% reported provider
196 recommendation). Again, the telephone reminder did not show more effectiveness than
197 provider recommendation for any race, gender, age, or number of years in practice.
198 Obviously more patients (80%) immunised during a physician visit reported the telephone
199 reminder as the main trigger for vaccine acceptance compared to 20% that reported provider
200 recommendation¹⁴.

201
202 Factors that led to immunisation drop-out in the control group were marital status, far
203 distance to health facility and educational status. Multivariable analysis with binary logistic
204 regressions showed male caregivers to be predictor of missed immunisation in the
205 intervention group. Far distance to health facility was a predictor of immunisation drop-out in
206 the control group. There was no predictor of immunisation drop-outs in the intervention
207 group at a cut off of 0.1 (90%).

208 **Conclusions:** Mobile phone reminders and recalls has proven very appeared effective in
209 reducing rate of pentavalent vaccination drop-outs among the study participants in the
210 selected hospitals in Abakaliki. Implementation of immunisation reminders and recall
211 systems are therefore strongly recommended in immunisation clinics in developing countries
212 especially in Nigeria for improved immunisation coverage in order to achieve SDG 3.

213 References

- 214 1. Nnonyelu AN, Nwankwo IU. Social determinants of differential access to health
215 services across five states South-East Nigeria. Europ. Scientific J. 2014; 3: 1857-7881
216

Comment [DS32]: You may wish to show a corresponding result clearly in this study. What proportion of vaccine overdue infants were you able to salvage in this study?

Comment [DS33]: I don't think this is your study; if "no", kindly state the correct reference/citation.

Comment [DS34]: No, I observed this earlier and I refer you again to Table 5 to check your p value.

Comment [DS35]: Yes, this variable was marginally significantly associated ($p=0.05$) with drop-out rate, but then in the control group which I earlier stated is not sufficient as the corresponding analysis for intervention group is not reflected at all; and importantly, I expect you to discuss this result in detail rather than making references to past works. Discuss the possible reasons for this results and its implication regarding infant vaccination.

Comment [DS36]: No, this variable did not account for drop-out in the control group as the p value (0.59) in Table 5 is higher than 0.05 (remember your methods section states that $p<0.05$ is the indicator of statistical difference or association). So to state that marital status and educational status led to drop-out among control group is not appropriate! More so, what you have in Table 5 should reflect intervention group importantly, I can't say this enough!

Comment [DS37]: Your methods section never states you used this statistical analysis, you may wish to include it in the appropriate section.

Comment [DS38]: This is an invalid inference as there is no data or result in all the study Tables reflecting or supporting it. Remember I earlier alluded to not showing intervention group results in Table 5, so check your analyses again.

Comment [DS39]: Well, whether true or not, no results of intervention group in Table 5 or any of the Tables to corroborate this, so drawing inference here is also not valid, no such cut off in results section. Check all over again.

Comment [DS40]: Write in full

Comment [DS41]: Pardon me, I did not review the citations, I hope the author(s) would be responsible for their correctness and appropriate citations within the texts.

2. Vaccine Reminder Recall Systems: A Practical Guide for Pediatric Practices
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14. Koch JA. Using a telephone reminder system to improve pneumococcal vaccination rates for medicare recipients. *Evidence-Based Practice Project Reports*. 2011;3.

Use of "yes" and "no" here is seemingly confusing or at variance with the column header, since the column header reads "number who dropped-out" I expect to read number under the header not "yes" or "no". Kindly explain in methods section how you got "yes" and "no" and what each means. May be you need to let us know the actual questions addressed in questionnaire forms you administered. I also want to believe questionnaire forms were administered to intervention and control groups.

Why does this Table show results for only control group since the Table title reads "post-intervention"? Remember, no intervention (reminder and recall) was given to control group, according to your methods except I got your methods wrong and I wish to be corrected on this; so readers would want to know corresponding results for intervention group to whom you gave intervention (reminders and recalls) which is actually the focus of the study, though the control group is not less important. I can't understand showing predictor of drop-out among control group leaving out intervention group! And you would want to conclude on the control group, I do not see this as appropriate!