

# Improving Retention Rates in Military Research: Lessons from a Randomized Treatment Trial for PTSD and Depression among Active-Duty Service Members

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## BACKGROUND

- Many barriers exist that impede high research follow-up rates among active-duty participants:
  - There are prohibitive regulations on the use of federal funding to provide reimbursement for study participation (Bush et al., 2013)
  - Service members are a highly mobile population that often relocate nationally and internationally (Braun, Kennedy, Sadler, & Dixon, 2015; Bush, Sheppard, Fantelli, Bell, & Reger, 2013)
  - Service members often report incomplete/inaccurate contact information (Braun et al., 2015)
  - It is difficult for service members to take time off work to participate (Bush et al., 2013)
  - Service members are predominately young and male, demographic groups that are poor survey responders and least prone to use health services
- Conducting longitudinal research on active-duty service members is essential to improve our understanding of military readiness and healthcare outcomes
- Obtaining high participation and retention rates in research is necessary to develop valid, representative findings on the population of interest (Bructon et al., 2013)
- Recently, a large, randomized effectiveness trial with an active-duty sample (STEPS-UP) achieved excellent retention rates over a 1-year follow-up period (Figure 1). Among other strategies used to improve retention rates, financial reimbursement was approved by the IRB ten months after the trial recruitment began and therefore there was some variation in whether participants were reimbursed at each time point. The goal of this poster is to a) describe specific strategies used in the STEPS-UP trial to improve retention rates, and b) examine the association between financial reimbursement and follow-up assessment completion.
  - We hypothesize that providing reimbursement will significantly improve research participation

## AIMS

- Describe strategies used in the STEPS-UP trial to improve retention rates among the active-duty sample that may be potential strategies used in future studies.
- Examine data on STEPS-UP trial follow-up assessments to evaluate the relationship between reimbursement and retention rates.

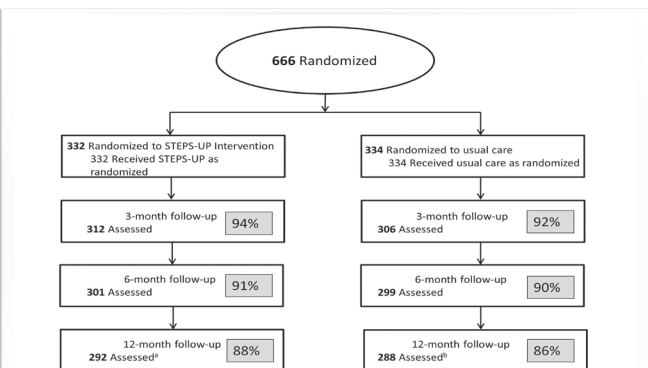
## METHODS

- Trial Methodology: 666 active-duty service members who screened positive for probable PTSD and/or probable depression were enrolled and randomized across 6 large US military treatment facilities that included 18 primary care clinics (Engel et al., 2014). Follow-up data was collected at baseline, 3-, 6-, and 12-months from time of enrollment (Figure 1; Engel et al., 2016).
- Follow-up assessment windows were open 30 days before the date of follow-up and remained open 60 days after the date of follow-up. An amendment to provide reimbursement (i.e.: online gift cards) to offset the burden associated with completing study assessments was approved by the IRB 10 months after recruitment was initiated.

To examine the effect of reimbursement on retention rates:

- We conducted descriptive statistics on the timing of assessment completion as related to compensation status. 137 participants who were eligible to complete their 3-month follow-up survey prior to receiving reimbursement but eligible to complete their 6-month survey after reimbursement was approved were included.
- We then conducted a mixed-effects logistic regressions to evaluate whether financial incentives were associated with an increased probability of completing outcomes assessments. 398 participants who were enrolled into the trial between 2/2012 and 2/2013 were included in the analyses. Participants included received different compensation schedules based on their time of enrollment.

FIGURE 1. STEPS-UP Study CONSORT - Follow-Up Survey Completion Rates



<sup>a</sup> A total of 273 participants (82%) in STEPS-UP intervention arm had data at baseline and all follow-ups for PDS (PTSD outcome measure); 280 participants (84%) had data at baseline and all follow-ups for SCL-20 (depression outcome measure).  
<sup>b</sup> A total of 271 participants (81%) in usual care arm had data at baseline and all follow-ups for PDS (PTSD outcome measure); 279 participants (84%) had data at baseline and all follow-ups for SCL-20 (depression outcome measure).

TABLE 1. Strategies for Maximizing Retention Rates

Strategies Used to Maximize Research Retention Rates	
Offered reimbursement to offset the burden associated with study participation via online gift cards in accelerated amounts for completing study assessments during off-duty hours	<ul style="list-style-type: none"> <li>\$40 - eligibility assessment</li> <li>\$45 - 3-month follow-up assessment</li> <li>\$50 - 6-month follow-up assessment</li> <li>\$55 - 12-month follow-up assessment</li> </ul>
Utilized multiple methods of reminders to complete follow-up assessments	<ul style="list-style-type: none"> <li>E-mails</li> <li>Phone calls</li> <li>Text messages (if participant consented to receiving text messages)</li> </ul>
Multiple follow-up assessment formats available	<ul style="list-style-type: none"> <li>Secure web portal</li> <li>Interview via telephone</li> <li>Paper-and-pencil mailed packet</li> </ul>
Follow-up assessment formats staggered based on participant response to reminders	<ul style="list-style-type: none"> <li>After 5 reminders - called for phone interview</li> <li>After 11 reminders - mailed paper-and-pencil packet</li> </ul>
Expanded follow-up data collection windows	<ul style="list-style-type: none"> <li>Opened 30 days before date of follow-up</li> <li>Remained open 60 days after date of follow-up</li> </ul>
Collected contact information for an emergency contact person	<ul style="list-style-type: none"> <li>Contacted if participant did not respond to reminders within 30 days</li> <li>Effort to re-establish contact and ensure participant's well-being</li> </ul>
Required participants to complete consent with on-site research coordinator prior to eligibility assessment	<ul style="list-style-type: none"> <li>Established relationship with the on-site research coordinator, so people were more apt to respond to research assessment reminders from the coordinator</li> </ul>
Provided participants with DA Form 3982 appointment card to complete follow-up survey in research coordinator's office	<ul style="list-style-type: none"> <li>Helpful if requested by command</li> </ul>
Research coordinator strategies	<ul style="list-style-type: none"> <li>Experience working with active-duty service members</li> <li>Meeting participants in clinic during regular appointments</li> <li>Reminding participants if seen on post</li> </ul>
Participants were still enrolled and followed, even if they left their post due to:	<ul style="list-style-type: none"> <li>Deployment</li> <li>PCS</li> <li>ETS</li> </ul>

## RESULTS

- Table 1 provides a list of the specific retention strategies used in the STEPS UP trial
- Of participants who were eligible to complete their 3-month follow-up survey prior to receiving reimbursement but eligible to complete their 6-month survey after reimbursement was approved (N = 137), 64% did not have changes in the timing of their assessment completion. Descriptive statistics are provided below:
  - 16.8% (N=23) of participants improved adherence to the follow-up schedule, completing their 6-month survey earlier in the follow-up window than their 3-month survey
  - 63.5% (N=87) of participants had no change in time completed within the follow-up window
  - 19.7% (N=27) completed the 6-month follow-up survey later in the window than their previous 3-month follow-up
- Descriptive statistics on participant completion rates based on compensation status are listed in Table 2.
- Preliminary results from the mixed-effects binary logistic regression suggest that receiving reimbursement was significantly associated with an increased probability of completing follow-up assessments (Figure 2).
  - More rigorous analyses will need to be conducted to substantiate this finding.

## REFERENCES

Braun, L. A., Kennedy, H. P., Sadler, L. S., & Dixon, J. (2015). Research on U.S. military women: Recruitment and retention challenges and strategies. *Military Medicine*, 180(12), 1247-1255. doi: 10.7202/milmed-D-14-00601

Bructon, V. C., Tierney, J., Steening, S., Harding, S., Meredith, S., Nazareth, L., & Rait, G. (2013). Strategies to improve retention in randomised trials (review). *Cochrane Database of Systematic Reviews*, 12, Art. No.: MR000032. doi: 10.1002/14651858.MR000032.pub2

Bush, N. E., Sheppard, S. C., Fantelli, E., Bell, K. R., & Reger, M. A. (2013). Recruitment and attrition issues in military clinical trials and health research studies. *Military Medicine*, 178(11), 1157-1163. doi: 10.7202/milmed-D-13-00234

Campbell, H. M., Raisch, D. W., Sather, M. R., Warren, S. R., & Segal, A. R. (2007). A comparison of veteran and nonveteran motivations and reasons for participating in clinical trials. *Military Medicine*, 172(2), 27-30.

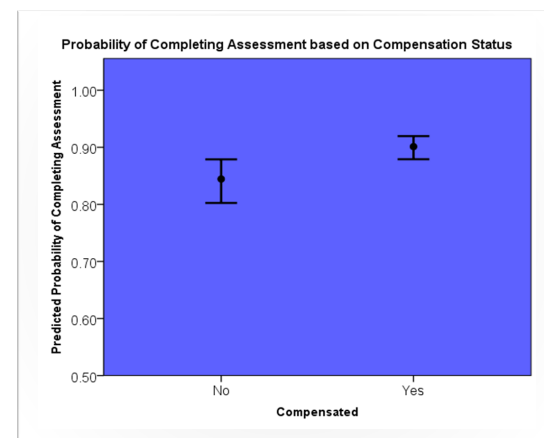
Engel, C. C., Jaycox, L. H., Freed, M. C., Brambilla, D., Zatzick, D., Katon, W. J. (2016). Centrally assisted collaborative telecare for posttraumatic stress disorder and depression among military personnel attending primary care: A randomized controlled trial. *JAMA Internal Medicine*. Epub ahead of print. doi: 10.1001/jamainternmed.2016.2402

Engel, C. C., Bray, R. M., Jaycox, L. H., Freed, M. C., Zatzick, D., Lane, M. E., ... & Katon, W. J. (2014). Implementing collaborative primary care for depression and posttraumatic stress disorder: Design and sample for a randomized trial in the US military health system. *Contemporary Clinical Trials*, 35(2), 310-319. doi: 10.1016/j.cct.2014.10.002

TABLE 2. Follow-up Survey Completion Percentages based on Reimbursement Received

Follow-Up Assessment Time	Completion Rates based on Reimbursement Received	
	Received reimbursement	Did not receive reimbursement
3-Month Follow-up	95.9%	85.4%
6-Month Follow-up	89.6%	80.6%

FIGURE 2. Probability of Completing Follow-Up Assessments based on Receiving Reimbursement



## IMPLICATIONS

- Preliminary analyses suggest there is a positive correlation between receiving reimbursement and completing study follow-up assessments, but additional analyses are needed.
  - Multiple strategies, in addition to reimbursement, were offered to participants and may have impacted overall retention rates, rather than just reimbursement alone
  - For active duty service members, altruistic motivation based on core values to participate to benefit fellow service members and pay back the medical community for their care may be powerful incentives for participating in research activities (Bush et al., 2013; Campbell, Raisch, Sather, Warren, & Segal, 2007)
- Employing multiple strategies within one study may help maximize retention rates

## CONCLUSIONS

- Obtaining high retention rates in research is important to ensure study results are consequential and reliable.
- It can be difficult for researchers to achieve high retention rates in research studies, particularly with active-duty service members.
- Researchers can employ a variety of strategies to maximize research retention rates
- Offering reimbursement to participants may be associated with higher follow-up completion rates, but additional analyses are needed to better understand the association.
- Need to reconsider policies that prevent providing reimbursement for research participation to active duty service members, as current policies may lead to poorer recruitment, inadequate sample sizes, and reduced retention rates.
- Ultimately, studies in the MHS that achieve high participant retention rates will better inform researchers, military leaders, providers, policy makers, and other key stakeholders about providing high quality health care to improve the lives of service members, veterans, and their families and increase military readiness.