



Volunteer Acquisition and Retention at a Student-Run Free Clinic

An Interdisciplinary Analysis of Recruitment Strategies and Leadership Influence

Isabella Dinelli, MD¹; Qays Alijabi, MD¹; Megan Rasmussen, MD¹; Alyssa Lee, MPH²;
Thomas Robinson, MD, MSc¹; Casey Daniel, PhD, MPH²

¹Whiddon College of Medicine, University of South Alabama, Mobile, Alabama, USA

²Mitchell Cancer Institute, University of South Alabama, Mobile, Alabama, USA

Corresponding Author: Isabella Dinelli; email: isabelladinellimd@gmail.com

Published: September 10, 2026

Abstract

Background: The University of South Alabama Student-Run Free Clinic (USASRFC) provides primary care to uninsured individuals in Mobile, Alabama, through student volunteer collaboration across undergraduate and graduate disciplines. Following a two-year closure due to coronavirus disease 2019, the USASRFC reopened in April 2022 and faced challenges recruiting and retaining volunteers. This single-center retrospective study evaluates volunteer retention patterns for sustaining interprofessional training in the post-pandemic era.

Methods: Volunteer records and executive board representation from April 2022 to December 2023 were reviewed. Variables included volunteer discipline, academic year, gender, attendance, retention rates, and the impact of discipline-specific liaisons and executive board membership on interprofessional involvement. Statistical analyses included t-tests, Chi-square tests, and multi-factor analysis of variance.

Results: Since reopening, the USASRFC has conducted 61 clinic sessions supported by 366 total volunteers, with a volunteer retention rate of 52.5%. The majority of volunteers were medical students (61.0%), followed by undergraduate students (21.2%), and pharmacy students (8.1%). The most significant factor in retention was academic year ($p < 0.001$). Discipline-specific liaisons significantly increased initial volunteer participation within their discipline ($T = 2.36$, $p = 0.031$), but did not affect long-term retention ($\chi^2 = 2.24$, $p = 0.13$). Executive board representation had no significant effect on interprofessional volunteer recruitment or retention.

Conclusions: While interprofessional collaboration enhances the services that resource-limited clinics can offer, sustaining engagement remains challenging. Although direct recruitment through disciplinary liaisons can boost volunteer recruitment in some disciplines, their effect on retention is limited, underscoring the need for sustainable strategies. The observed low retention rate reflects resource inefficiencies, as high volunteer turnover demands recruitment and training efforts. Future USASRFC interventions should emphasize early-stage student engagement, interprofessional faculty partnerships, and clear recognition of volunteer contributions to maintain a diverse volunteer base capable of providing broader care than single-disciplinary clinics.

Introduction

Student-run free clinics (SRFCs) are critical to addressing healthcare disparities by providing essential care to underserved and uninsured populations. According to the Centers for Disease Control and Prevention, 24.7 million Americans under the age of 65 are uninsured.¹ SRFCs offer vital primary care services to these patients, many of whom may not otherwise have access to healthcare, and with widely reported patient satisfaction.²⁻⁵ Beyond patient care, SRFCs offer student volunteers

across various health disciplines unique opportunities to gain early clinical exposure and pre-career experience with interprofessional teamwork, highlighting the mutually beneficial nature of these programs.⁶⁻¹⁰

The University of South Alabama Student-Run Free Clinic (USASRFC) exemplifies this model by fostering interprofessional collaboration among student volunteers from diverse fields, including medicine, nursing, physical therapy, speech-language pathology, occupational therapy, audiology, physician assistant, and pharmacy. Students can contribute their discipline-specific expertise to the primary care clinic and expand services by delegating specialized tasks based on discipline. This also improves clinical workflow through role delegation. However, the USASRFC closed for two years due to the coronavirus disease 2019 (COVID-19) pandemic and has faced challenges rebuilding its student volunteer base. This revealed a critical need for practical volunteer training and retention strategies to ensure sustainable continuity of care. While our study does not directly measure interprofessional teamwork outcomes, it focuses on student volunteer retention as a prerequisite for sustaining an interprofessional workforce, ensuring consistent representation of multiple health professions and enabling collaboration in a resource-limited primary care setting.

To date, numerous studies have explored student volunteerism motivations in SRFCs,¹¹⁻¹⁵ however, little is known about volunteer retention dynamics within these clinics, particularly in the context of rebuilding efforts following major disruptions, such as the COVID-19 pandemic. Although volunteers are not reimbursed monetarily, there are significant financial and time costs associated with the recruitment, training, and management of volunteers.^{16,17} By examining retention rates, identifying characteristics that encourage sustained volunteer engagement, and categorizing discipline-specific participation, we aim to inform strategies to improve training and foster a reliable, interprofessional volunteer base. These actionable strategies are essential for sustaining the long-term effectiveness of SRFCs and broadening volunteer services by improving interprofessional representation across volunteer roles.

Methods

The USASRFC hosts weekly primary care clinics on Friday afternoons at a local homeless shelter in Mobile, Alabama, serving residents and the public. Each clinic session is staffed by two interprofessional student volunteer teams, led by a student USASRFC board member, under the supervision of an attending internal medicine physician. Student board members are elected to serve roles such as president, vice president, and discipline liaison in addition to running clinical teams. Discipline liaisons are elected from each field to bridge their respective academic discipline and the clinic. They are responsible for outreach to their classmates, ensuring representation from their discipline, and recruiting new volunteers through onboarding.

Student volunteers of all experience levels and disciplines are accepted but must complete a training module before participating. The one-hour training module covers clinic logistics, patient confidentiality, cultural sensitivity, discipline-specific role expectations, and effective teamwork. Volunteer registration occurs through a public sign-up sheet on the clinic's website. A select number of volunteer slots are reserved for each discipline based on class size (Table 1).

We examined student volunteer records and board membership records from the clinic's official reopening in April 2022 through December 2023. Variables included volunteer demographics (discipline, year of graduate education, gender), as well as frequency of participation. These variables were selected because they were consistently available in clinic records and have been reported in prior literature as potential influences on engagement.^{6,7,9,10,12,18} The retention rate was calculated as the percentage of volunteers who participated in at least one additional clinic session after their initial attendance.

We reviewed board member data to assess whether a lack of representation in leadership roles from specific disciplines was correlated with decreased volunteers from those fields. A multi-factor

Table 1. Student-run free clinic volunteer sign-up sheet with corresponding class size

Year/Discipline	Student Volunteer Slots, N	Class Size of Associated Department, N
First-year medical student (M1)	3	80
Second-year medical student (M2)	2	80
Third- or fourth-year medical student (M3/M4)	2	77
First- or second-year pharmacy student (P1/P2)	2	24
Third- or fourth-year pharmacy student (P3/P4)	1	24
Nursing student (Nurs)	2	193
Physician assistant student (PA)	1	60
Audiology student (AUD)	2	11
Occupational therapy student (OT)	2	24
Physical therapy student (PT)	2	40
Speech-language pathology student (SLP)	1	24
Non-nursing undergraduate student (UDG)	5	13,768

Table 2. Descriptive statistics of student volunteers and board members from April 2022-December 2023

Statistic	Volunteers	Board Members
Number of total experiences	366	108
Number of total unique volunteers	202	36
Number of total volunteers who returned	106	25
Retention rate	0.52	0.69
Mean volunteer sessions attended	2.20	3.03
Median volunteer sessions attended	2	3
Standard deviation	2.02	2.32
Range of volunteer sessions	1-17	1-10
Most common year in graduate school	1	2
Female volunteers	122	24
Female volunteer rate	0.60	0.67

analysis of variance (ANOVA) was performed using Python (version 3.12.1, Python Software Foundation, Wilmington, DE), excluding completely unrepresented disciplines, to determine possible associations between demographic factors and the student volunteer retention rate. Partial eta squared (η^2) was reported as a measure of effect size, indicating the proportion of variance in volunteer participation explained by each factor. A t-test assessed whether having a student discipline liaison or a board member of a specific discipline was associated with recruitment within that discipline, while a Chi-square test assessed whether a discipline liaison or board member affected volunteer retention within that discipline. $P < 0.05$ was considered statistically significant.

Results

Between April 2022 and December 2023, the USASRFC conducted 61 clinic sessions, staffed by 366 student volunteer shifts (Table 2). These shifts were provided by 202 unique individuals, of whom 106 returned for additional clinic sessions. This resulted in an overall retention rate of 52.5%. The mean number of volunteer sessions attended was 2.20 (standard deviation [SD] = 2.02), with volunteers participating in a range of 1-17 sessions. Board members participated more frequently, averaging 3.03

Table 3. Results of the factorial ANOVA examining the effects of discipline, year, and gender on volunteer experience count

Source	SS	DF	MS	F	p-unc	np2
Discipline	< 0.001	2.00	< 0.001	< 0.001	1.00	< 0.001
Year in School	349.00	3.00	116.33	33.77	< 0.001	0.43
Gender	< 0.001	1.00	< 0.001	< 0.001	1.00	< 0.001
Discipline x Year in school	12.35	6.00	2.056	0.60	0.73	0.03
Discipline x Gender	0.03	2.00	0.01	0.004	0.95	< 0.001
Year in School x Gender	11.45	3.00	3.82	1.11	0.35	0.02
Discipline x Year School x Gender	37.33	6.00	6.22	1.81	0.10	0.07
Residual	465.08	135.00	3.44	-	-	-

ANOVA: analysis of variance; SS: sum of squares; DF: degrees of freedom; MS: mean square; p-unc: p uncorrected; np2: partial eta squared. $P < 0.05$ was considered statistically significant.

Table 4. Comparison of discipline liaison and executive board roles on student volunteer recruitment (t-test) and retention (Chi-Square test)

Test	T-statistic	p-value
T-Test for Volunteer Recruitment (Liaison)	2.36	0.03
T-Test for Volunteer Recruitment (Board Member Representation)	-0.35	0.73
Test	χ^2	p-value
Chi-Squared Test for Liaison and Retention	2.24	0.13
Chi-Squared Test for Board Member Representation and Retention	0.32	0.57

$P < 0.05$ was considered statistically significant.

sessions (SD = 2.32), with participation ranging from 1-10 sessions. Board member retention was notably higher at 69%. The majority of both volunteers (60%) and board members (67%) were women.

Student volunteers were primarily medical students, constituting 61.0% of the volunteer population. Undergraduate students were the second most represented, accounting for 21.2% of volunteers, followed by pharmacy students at 8.1%. No volunteers were documented from the following disciplines: physical therapy, audiology, physician assistant studies, or speech-language pathology. In terms of leadership, the executive board during April 2022-December 2023 consisted of 36 students: 30 medical students, 4 pharmacy students, 1 occupational therapy student, and 1 audiology student. Disciplines such as physical therapy, physician assistant, speech-language pathology, and undergraduate programs were not represented. Most volunteers were in their first year of graduate school, with first-year medical students comprising the highest percentage (51.1%), while most board members were in their second year of graduate school.

Multi-factor ANOVA on student volunteer demographics (Table 3) revealed that year in school was the strongest predictor of volunteering frequency ($F = 33.77$, $p < 0.001$, $np^2 = 0.429$), accounting for 42.9% of the variance in the number of student volunteering sessions. Discipline and gender, individually, were minimally associated with volunteer engagement ($p = 1.00$ for both). Further, interactions between discipline and gender ($F = 0.004$, $p = 0.95$), and year in school and gender ($F = 1.11$, $p = 0.35$), were not significant, indicating these factors did not meaningfully interact to influence volunteering patterns. As shown in Table 3, discipline and gender each explained less than 1% of the variance, underscoring their negligible role in predicting engagement.

Analysis using T-tests for volunteer recruitment and Chi-square tests for volunteer retention assessed the impact of discipline liaison and board membership representation on student volunteer

engagement (Table 4). Liaison roles significantly increased initial volunteer participation frequency within their respective disciplines ($T = 2.36$, $p = 0.031$) but did not significantly impact long-term retention ($\chi^2 = 2.24$, $p = 0.13$). Board representation showed no significant effects on volunteer recruitment ($T = -0.35$, $p = 0.73$) or volunteer retention rates ($\chi^2 = 0.32$, $p = 0.57$). Table 4 demonstrates that while liaisons enhanced short-term recruitment, their influence did not extend to sustained retention. Similarly, board representation neither enhanced recruitment nor retention, suggesting that leadership presence alone is insufficient to drive interprofessional engagement.

Discussion

This study assessed volunteer recruitment and retention at the USASRFC following significant disruptions due to the COVID-19 pandemic. The primary goal was to identify data needed to inform effective strategies to rebuild and sustain a committed student volunteer group within an interprofessional framework- broadening the scope of services beyond those offered by single-discipline clinic. Understanding the factors that influence both initial volunteer recruitment and sustained engagement is vital, as poor retention leads to increased need for frequent training and impairs clinical efficiency.^{18,19} Our findings suggest that long-term volunteer involvement is most strongly associated with being early in one's training, rather than liaisons or executive board representation. Disciplines with fewer volunteers were less likely to have students ascend to leadership roles, which perpetuates a cycle of underrepresentation. Medical students comprised the majority of volunteers, which likely reflects the clinic's medical school affiliation and internal medicine faculty oversight. Pharmacy and undergraduate students were also well represented, whereas no physical therapy, physician assistant, or speech-language pathology students participated during the study period. This absence may reflect structural barriers, lack of faculty partnerships, or unclear pathways for these professions to contribute within a primary care clinic setting. Our findings therefore inform strategies to sustain the volunteer base necessary for interprofessional collaboration.

Academic year was the most significant predictor of volunteer participation frequency ($F = 33.77$, $p < 0.001$, $\eta^2 = 0.429$). This large effect size demonstrates that early-stage students are the most critical group to engage for long-term retention. Moreover, this trend likely reflects increased scheduling flexibility and stronger initial motivations among early-stage students seeking early clinical exposure.⁶⁻¹⁰ As shown in Table 3, neither gender nor discipline explained more than 1% of variance, confirming their minimal influence on volunteer engagement. This suggests that discipline-targeted strategies may be less impactful in a setting where discipline representation is already low. Thus, SRFC recruitment strategies may benefit from targeting students early in their academic careers to maximize long-term volunteer retention and foster leadership development.

Expanding interprofessional collaboration is essential for resource-limited clinics, as it enhances patient outcomes and broadens the scope of services - goals that are especially critical when diverse disciplinary input is lacking.^{20,21} Our analysis explored the efficacy of our current recruitment strategy using discipline-liaisons to recruit volunteers directly, as well as the impact of leadership representation in board members on inspiring new recruits and sustaining engagement. As shown in Table 4, liaisons roles were effective for short-term recruitment but did not sustain long-term retention. Similarly, board representation had no measurable effect on volunteer recruitment or retention, highlighting the limited influence of leadership presence alone. These findings suggest that while liaisons may bolster initial volunteer recruitment from respective disciplines, they alone are insufficient for growing an SRFC's volunteer base. To strengthen long-term engagement, SRFCs should prioritize structured retention programs that emphasize mentorship and recognition, establish baseline shift requirements for continued volunteering, involve faculty from underrepresented disciplines, to ensure consistent participation and reduce the burden of repeated training. At present, the USASRFC operates solely under physician oversight with minimal faculty engagement from other health

professions; this is a limitation that future models should address by integrating direct involvement of additional faculty to support sustained interprofessional collaboration.

Effective volunteer retention strategies documented in prior literature underscore key components such as clear role expectations, meaningful activities, recognition of efforts, and strong management practices.²²⁻²⁴ When exploring initial motivation for volunteering, students frequently cite altruism, the opportunity to gain clinical experience, and fostering a sense of responsibility towards their patients.¹¹⁻¹⁵ SRFCs should design training programs and clinical workflows that clearly communicate these roles and expectations from the outset. Moreover, SRFCs can recognize long-term volunteers by offering peer mentorship opportunities that emphasize personal growth and achievement, and by clearly communicating the tangible impacts volunteers have on patient outcomes to foster a sense of community.¹¹ Outside the clinic, hosting community-building events such as informal gatherings or recognition ceremonies may reinforce a sense of purpose in volunteers - factors known to support long-term participation.

Lastly, prior studies describe the negative impact of volunteer empathy fatigue and how it decreases retention rates.¹¹ This effect can potentially be mitigated through efforts acknowledging the positive impact volunteers have on their communities. Prior studies suggest providing small tokens of appreciation (social media features, t-shirts) can significantly encourage volunteer participation, particularly in settings without the resources to offer monetary incentives.²⁵⁻²⁸ Ultimately, acknowledgment in some form, whether verbal or tangible, has potential to enhance participation, as individuals like to feel appreciated, regardless of their motivation.

Given the USASRFC's two-year closure due to COVID-19, rebuilding our volunteer base must center on evidence based-strategies including emphasizing the intrinsic and extrinsic rewards of volunteering, implementing peer mentorship programs that reward long-term commitment, clearly communicating the tangible impacts volunteers have on patient outcomes, and creating a volunteer feedback system allowing us to adapt clinical workflow to suit our volunteers better.²⁹ These approaches offer scalable, resource-conscious models that SRFCs may adopt when rebuilding after disruption.

Limitations

This study's main limitation is its limited generalizability due to its single-center design. Small sample sizes, particularly in underrepresented disciplines, restricted detailed statistical analysis of participation trends. Some disciplines, including physical therapy, audiology, and speech-language pathology, had no volunteers during the study period, limiting our ability to assess interprofessional engagement fully. Their absence highlights potential structural or awareness barriers, which future work should address through faculty partnerships to grow the interprofessional volunteer foundation. This study also relied solely on quantitative data; mixed-methods approaches such as surveys or interviews may better capture student motivations to volunteer as well as reasons behind attrition. We did not examine other potential factors that may influence retention, such as whether volunteers had discipline-specific opportunities to see patients during their shifts. Future studies should explore how patient interaction, scheduling flexibility, and individual motivations for volunteering contribute to retention, as these elements were not captured in our dataset. We also did not track the number of patients seen per shift, which limited our ability to assess whether lack of patient interaction influenced volunteer retention. Finally, the definition of retention used in this study, participation in at least one additional clinic session, provides a conservative measure of re-engagement but may overestimate sustained long-term commitment. Future studies should consider stricter thresholds, to better capture long-term retention.

Conclusion

Understanding volunteer retention dynamics is essential for the long-term sustainability of re-

source-limited clinics. Our study found that academic year of study plays the largest role in volunteer recruitment and retention. Thus, resources should be spent on students early in their training to foster long-term participation and leadership. Liaisons and executive board leadership are not enough to recruit volunteers from underrepresented disciplines. Instead, we recommend a more active approach that focuses on attributes of what student volunteers care about: offering passageways for volunteers to be recognized and rewarded for their contributions through peer mentorship, fostering a community, and acknowledging student contribution towards patient care by publicizing impact reports.

Acknowledgements

We thank the USASRFC volunteers for their dedication and Dr. Casey Daniel for her guidance throughout the project's development and review.

Disclosures

The authors have no conflicts of interest to disclose.

References

- Centers for Disease Control and Prevention. Health Insurance Coverage: Early Release of Estimates From the National Health Interview Survey, 2023. National Center for Health Statistics. June 2024. Accessed February 22, 2025. <https://www.cdc.gov/nchs/data/nhis/earlyrelease/insur202406.pdf> [LINK](#)
- Schroeder MN, Hickey MO. Patient satisfaction with diabetes care in a student-run free medical clinic: a quality improvement study. *J Pharm Technol*. 2020;36(2):61-67. doi:10.1177/8755122519899084 [LINK](#)
- Felder-Heim C, Mader K. Quality of diabetes and hypertension management at the DAWN (Dedicated to Aurora's Wellness and Needs) Student-Run Free Clinic. *Cureus*. 2020;12(8):e9539. doi:10.7759/cureus.9539 [LINK](#)
- Heller M, Thomas AM, Peters SM, Dusterwald KM, Klausner JD. An evaluation of patient and student experience at a longstanding student-run free clinic in Cape Town, South Africa. *Cureus*. 2019;11(12):e6320. doi:10.7759/cureus.6320 [LINK](#)
- Smith SD, Rojas SM, Huang J, Yang K, Vaida F. Longitudinal hypertension outcomes at four student-run free clinic sites. *Fam Med*. 2017;49(1):28-34. [LINK](#)
- Modi A, Fascelli M, Daitch Z, Hojat M. Evaluating the relationship between participation in student-run free clinics and changes in empathy in medical students. *J Prim Care Community Health*. 2017;8(3):122-126. doi:10.1177/2150131916685199 [LINK](#)
- Taylor MA, Hollett YR, Anderson JP, Schwenk TL. Educational value of a free medical clinic operated by medical students. *Fam Med*. 2016;48(2):127-131. [LINK](#)
- Simpson SA, Long JA. Medical student-run health clinics: important contributors to patient care and medical education. *J Gen Intern Med*. 2007;22(3):352-356. doi:10.1007/s11606-006-0073-4 [LINK](#)
- Kovalskiy A, Ismail R, Tran K, Desai A, Imran A, Hernandez C. Evaluating student attitudes: perceptions of interprofessional experiences following participation in a student-run free clinic. *Cureus*. 2017;9(2):e1053. doi:10.7759/cureus.1053 [LINK](#)
- Sick B, Zhang L, Weber-Main AM, et al. Changes in health professional students' attitudes toward the underserved: impact of extended participation in an interprofessional student-run free clinic. *J Allied Health*. 2017;46(4):213-219. [LINK](#)
- Gaber J, Clark RE, Lamarche L, et al. Understanding volunteer retention in a complex, community-centred intervention: a mixed methods study in Ontario, Canada. *Health Soc Care Community*. 2022;30(6):2259-2269. doi:10.1111/hsc.13775 [LINK](#)
- Merrilees B, Miller D, Yakimova R. Volunteer retention motives and determinants across the volunteer lifecycle. *J Nonprofit Public Sect Mark*. 2019;32(1):25-46. doi:10.1080/10495142.2019.1689220 [LINK](#)
- Rovers J, Japs K, Truong E, Shah Y. Motivations, barriers and ethical understandings of healthcare student volunteers on a medical service trip: a mixed methods study. *BMC Med Educ*. 2016;16:94. doi:10.1186/s12909-016-0618-0 [LINK](#)
- Siqueira MAM, Torsani MB, Gameiro GR, et al. Medical students' participation in the volunteering program during the COVID-19 pandemic: a qualitative study about motivation and the development of new competencies. *BMC Med Educ*. 2022;22(1):111. doi:10.1186/s12909-022-03147-7 [LINK](#)
- Benjamin M, Susan G, Stephanie R, Melanie M. A look into motivations and barriers to student involvement at the SHARING clinic, a student-run free clinic. *J Stud-Run Clin*. 2022;8(1). doi:10.59586/jsrc.v8i1.313 [LINK](#)
- Brudney JL. Designing and managing volunteer programs. In: Herman RD, ed. *The Jossey-Bass Handbook of Nonprofit Leadership and Management*. 3rd ed. Jossey-Bass; 2016:688-733.
- Oliver D, Dolovich L, Lamarche L, et al. A volunteer program to connect primary care and the home to support the health of older adults: a community case study. *Front Med (Lausanne)*. 2018;5:48. doi:10.3389/fmed.2018.00048 [LINK](#)
- Claxton-Oldfield S, Claxton-Oldfield J. Should I stay or should I go: a study of hospice palliative care volunteer satisfaction and retention. *Am J Hosp Palliat Care*. 2012;29(7):525-530. doi:10.1177/1049909111432622 [LINK](#)
- Lowenberg-DeBoer K, Akdere M. Integrated review of volunteer retention and implications for training. *Int J Volunteer Admin*. 2018;33(2).

20. Sangaleti C, Schweitzer MC, Peduzzi M, et al. Experiences and shared meaning of teamwork and interprofessional collaboration among health care professionals in primary health care settings: a systematic review. *JBIS Database System Rev Implement Rep*. 2017;15(11):2723-2788. doi:10.11124/JBISRIIR-2016-003016 [LINK](#)
21. Smith T, Fowler-Davis S, Nancarrow S, Ariss SMB, Enderby P. Leadership in interprofessional health and social care teams: a literature review. *Leadersh Health Serv*. 2018;31(4):452-467. doi:10.1108/LHS-06-2016-0026 [LINK](#)
22. Claxton-Oldfield S. Hospice palliative care volunteers: the benefits for patients, family caregivers, and the volunteers. *Palliat Support Care*. 2015;13(3):809-813. doi:10.1017/S1478951514000674 [LINK](#)
23. Bidee J, Vantilborgh T, Pepermans R, et al. Daily motivation of volunteers in healthcare organizations: relating team inclusion and intrinsic motivation using self-determination theory. *Eur J Work Organ Psychol*. 2017;26(3):325-336. doi:10.1080/1359432X.2016.1277206 [LINK](#)
24. Tang F, Morrow-Howell N, Choi E. Why do older adult volunteers stop volunteering? *Ageing Soc*. 2010;30(5):859-878. doi:10.1017/S0144686X10000140 [LINK](#)
25. McCullagh MC, Sanon MA, Cohen MA. Strategies to enhance participant recruitment and retention in research involving a community-based population. *Appl Nurs Res*. 2014;27(4):249-253. doi:10.1016/j.apnr.2014.02.007 [LINK](#)
26. Halpern SD, Chowdhury M, Bayes B, et al. Effectiveness and ethics of incentives for research participation: 2 randomized clinical trials. *JAMA Intern Med*. 2021;181(11):1479-1488. doi:10.1001/jamainternmed.2021.5450 [LINK](#)
27. Abdelazeem B, Abbas KS, Amin MA, et al. The effectiveness of incentives for research participation: a systematic review and meta-analysis of randomized controlled trials. *PLoS One*. 2022;17(4):e0267534. doi:10.1371/journal.pone.0267534 [LINK](#)
28. Brueton VC, Tierney J, Stenning S, et al. Strategies to improve retention in randomized trials. *Cochrane Database Syst Rev*. 2013;(12):MR000032. doi:10.1002/14651858.MR000032.pub2 [LINK](#)
29. Trent SB, Neufeld DJ, Albers D, et al. Communicating our way to engaged volunteers: a mediated process model of volunteer communication, engagement, and commitment. *J Community Psychol*. 2020;48(7):2174-2190. doi:10.1002/jcop.22353 [LINK](#)