

Photovoice as an intervention for college students living with mental illness: A pilot study

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Abstract

Introduction: Photovoice is a participatory-action research method in which participants capture and collectively reflect upon photos of their lived experience. Photovoice participation may be beneficial for individuals living with mental illness, but its effects have not been quantitatively measured.

Methods: In this pilot study, 20 college students living with a mental illness and prescribed at least 1 medication were randomized to a Photovoice group intervention or usual group counseling, which was an active control. Participants completed the BURNS Anxiety Inventory, Beck Depression Inventory, and Medication Adherence Rating Scale at baseline and 8 weeks. Between-groups comparisons were conducted.

Results: Photovoice participants experienced a significantly greater reduction in the BURNS Anxiety Inventory (-8.5 vs -2.6; $P=.049$) compared to control participants. No difference was seen in change in the Beck Depression Inventory (6.7 in the Photovoice group vs 0.2 among controls; $P=.26$). Mean medication adherence scores worsened in both groups from baseline with no difference between the groups (1 vs 0.86; $P=.16$).

Discussion: Photovoice may be a resource-efficient and effective intervention to reduce anxiety among college students with mental illness; however, it may be associated with poorer medication adherence. Further study is needed to evaluate these findings.

Keywords: photovoice, anxiety, group intervention, mental illness, medication adherence

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past year.² Recent reports³⁻⁵ have highlighted concerns regarding increased frequency and severity of major depression, anxiety, and personality disorders among a broad group of college students, including graduate students. Up to 33% of college students report depression significant enough to limit function, and more than 37% report overwhelming anxiety. These data reflect a dramatic increase in the portion of the campus population affected by a mental health problem compared with a decade ago.⁶

Introduction

Mental disorders account for a significant disease burden for college students.¹ Approximately 1 in 3 college freshmen reports having mental health problems in the

Growing demand for on-campus mental health services has regularly surpassed the capacity of campus counseling centers, which face resource limitations. Therefore, some students who seek treatment are not able to get their needs

met. In addition, a significant portion of those students struggling with mental health problems do not seek treatment at all.⁶ Reasons for not seeking treatment may include perception that treatment is not needed, lack of time, preference for self-management, and stigma.^{7,8} College students who do seek treatment face further challenges, including high rates of medication nonadherence. Up to 55% of students are nonadherent with their antidepressant medication.¹² Several factors contribute to medication nonadherence for people of all ages¹³; however, for college students with mental illnesses, factors such as lack of consistent day-to-day routine, lack of acceptance of mental illness, and stigma may be especially prominent.¹⁴

Innovative, engaging, and resource-efficient approaches that minimize barriers to treatment-seeking and convey messages of a supportive, nonstigmatizing campus community are needed to better address mental health needs among college students. Group therapies, in addition to individual approaches, have been purported as an approach that optimizes scarce resources while addressing many of the concerns of college students with mental illnesses, such as social isolation, interpersonal relationships, low illness acceptance, and self-esteem.¹⁵

Photovoice (PV) is a participatory-action research methodology involving photography and reflection. It involves creation of a visual reality of a person's lived experience with a particular topic. With PV, research participants are the experts on a topic and communicate their expertise via capturing photographs and engaging in deep reflection upon them, typically in individual as well as group settings. This leads to creation of meaning, collective voice about a topic, and a venue for communication to others. Despite its typical employment as a research modality, PV offers potential advantages as a therapeutic group modality.¹⁶ By drawing students in through the ability to focus on creativity and reflection, a PV approach may theoretically be more enticing and less stigmatized than traditional group therapy. It also often leads to a sense of empowerment and group support due to the shared nature of discussing experiences related to the topic, in this case, living with a mental illness.^{17,18} The authors previously have undertaken PV studies^{14,19,20} in partnership with college students living with mental illness and psychotropic medications, using a qualitative approach to better understand the experience of living with a mental illness and medication on a college campus. A significant takeaway from this work is that participating in a PV study was beneficial and possibly therapeutic to participants' mental health through learning, acceptance of illness and medications, and peer support. Participants have anecdotally reported that their participation in a PV study increased their medication adherence through

enhanced daily structure and reduced negative perceptions about medications.²⁰

Photovoice has not previously been employed as a therapeutic intervention or adherence promotion strategy in a health care setting utilizing quantitative measurements of impact. Given the above-described benefits, we hypothesized that use of PV as an intervention for students with mental illness would result in greater improvements in mood and anxiety and would contribute to increased medication adherence compared to usual care. We describe a pilot study to explore whether using PV in this manner is more beneficial for depression symptoms, anxiety symptoms, or medication adherence among college students as compared with usual group therapy, which served as an active control.

Method

This study was conducted over an 8-week period at the campus counseling center at a mid-sized public academic institution in the Midwest. North Dakota State University Institutional Review Board reviewed and approved all study procedures. Participants were recruited from the student body via flyers posted throughout campus. Eligible students were those at least 18 years of age, diagnosed with depression and/or anxiety, and taking at least 1 medication to treat the same. Interested individuals who met these criteria were scheduled for an initial individual session with 1 of the 2 licensed psychologists on the counseling center staff, who confirmed study eligibility and performed a safety assessment to ensure the individual was not at risk of harm to self or others or in need of referral to a higher level of care. Each eligible participant was informed of study procedures and risks and benefits and offered the opportunity to use a pseudonym for added protection of their identity if they wished. Twenty participants who gave their informed consent to participate and have their photos and reflections published anonymously were randomized in a 1:1 fashion to PV or control (Figure 1).

All participants, regardless of group assignment, were scheduled for a 1-hour individual session every other week ($n = 3$ individual sessions) as well as a 1-hour group session every other week (on alternating weeks opposite of individual sessions, $n = 3$ group sessions). All participants were given information about the importance of protecting the privacy of other participants and encouraged not to discuss information about other participants outside of the counseling center environment.

Photovoice participants were directed to use a smartphone camera to capture photos that, for them, represented the theme of *living with my mental illness*.

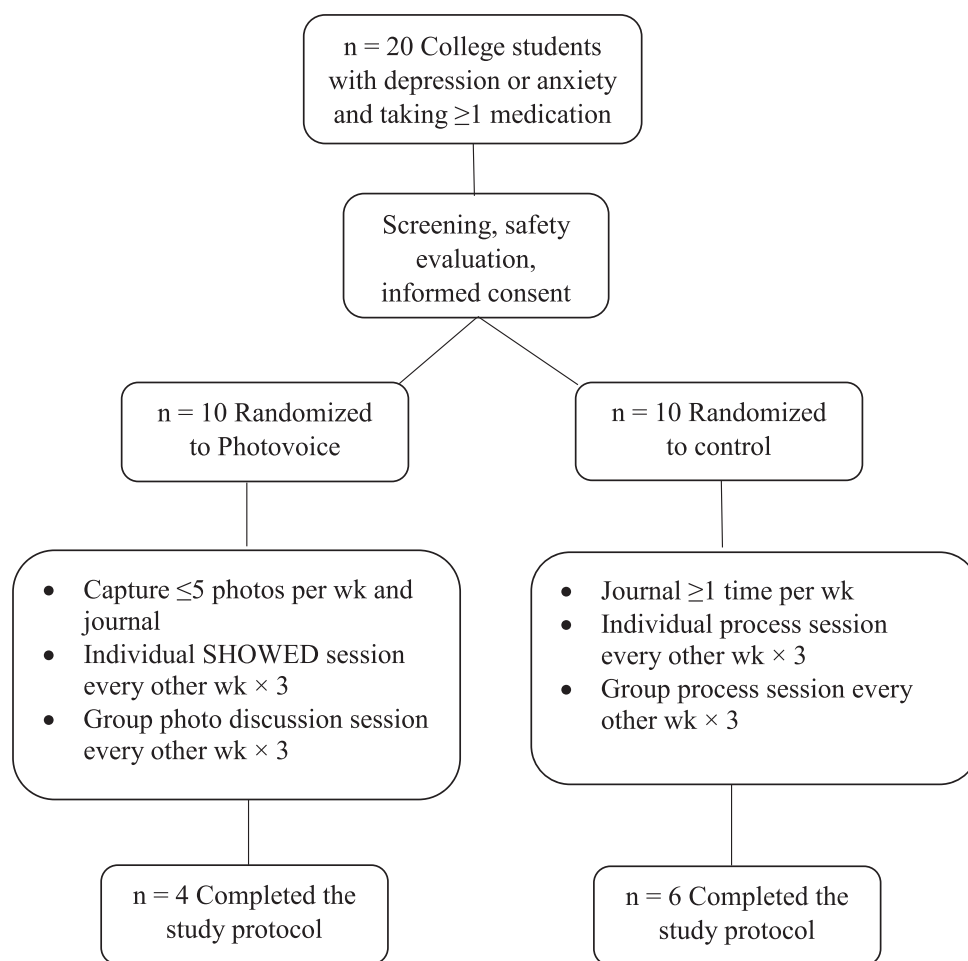


FIGURE 1: Photovoice and control randomization and study flow

They were given a journal to record their thoughts about each photo (using the SHOWED technique²¹ as a guide; Table 1) and were encouraged to use their journals ad libitum as frequently as they liked. Photovoice participants e-mailed 1 to 5 photos to the psychologist every other week in advance of their individual photo reflection sessions. During individual sessions, the provider asked each SHOWED question about each photo and encouraged the participant to elaborate upon associated feelings or illness-related features of each photo. At the conclusion of each individual session, participants chose which of their photos they wanted to discuss during the group

reflection session the following week. During group reflection sessions, participants took turns discussing their chosen photos (which were displayed on a video screen), using their journal entries as a guide. An open and interactive space was created by the psychologists, who encouraged dialogue about each photo from all participants in attendance.

Participants assigned to the control were given a journal and asked to reflect, weekly at a minimum, on the topic of *living with my mental illness*. Individual sessions lasted approximately 50 minutes and were focused on processing themes from journal entries written by participants throughout the week. The psychologists utilized person-centered approaches of reflection and processing to facilitate deeper meaning and illuminate emergent themes associated with participants' journaling. Group sessions met every other week and were process groups focusing on here-and-now interactions in addition to illuminating group themes of shared experiences.²²

All participants completed prestudy and poststudy evaluations including the Beck Depression Inventory (BDI-II),²³

TABLE 1: The SHOWED technique and explanation^a

S	What is Shown here?
H	What is really Happening here?
O	How does this relate to Our (your) lives?
W	Why are things this way?
E	How could this image Educate people?
D	What should be Done about this?

^aAdapted from National Association of City & County Health Officials.²¹


Photovoice Activity	Control Activity
	<p>Facilitator prompt: How many of you do active interventions to manage your many tasks in order to deal with your anxiety? And is that helpful, is that not helpful??</p>
<p>Julia: That is my make-up... There's quite a bit... It has become a security blanket in a way. If I'm not wearing it, It's hard for me to have a good day. I feel like I work better and pay attention better and then do better in a day if I'm wearing make-up and feel put together... I feel like I waste a lot of time and money with my make-up so it's kind of annoying.</p> <p>Danielle: A lot of people say you don't need to wear so much makeup and think I'm doing it to impress others, but really I'm doing it for myself.</p> <p>Alexis: If you look good, you feel good—it's true.</p> <p>Emily: The most important thing I would put across is that a lot of people who are wearing make-up aren't doing it for you, they're doing it for themselves and I think it's important that a lot of people know that.</p>	<p>Kim: I get so embarrassed when I come to class and my stuff isn't done... or like when the teacher calls on you and you're like 'um I didn't finish it' and then you feel like people are like staring at you like oh you're the worst person in this entire class and they're judging... but I think that because I'm so anxious I feel like because I'm such a procrastinator I am good at making up what I know from what I have seen. So, like if I skim something, I can talk about something. And so, that doesn't help either because like then it convinces me to still be worried about it and still put it off and so it really is this never-ending cycle.</p> <p>Anna: It's just the way though that we cope.</p> <p>Brian: The fact that we're like this. That's what I find. I have all these strange coping mechanisms to deal with the fact that I'm too anxious to do things normally.</p>

FIGURE 2: Example material and discussions by activity type

Burns Anxiety Inventory (BURNS),²⁴ and Medication Adherence Rating Scale (MARS).²⁵ The BDI-II and BURNS instruments were chosen as they were already a standard part of all patients' first-visit encounter with the campus counseling center. Lower scores for each of these instruments indicate symptom improvement. The MARS was chosen due to its simplicity as well as its prior use and validation in psychiatric patient populations.²⁶⁻²⁸ Higher scores are associated with higher likelihood of medication adherence. An exit questionnaire was also completed. Descriptive statistics and analyses of variance controlling for baseline measures were performed with quantitative data to assess for differences between groups from preassessments to postassessments based on completion analysis. Statistical significance was defined as $P \leq .05$. An informal summary analysis of exit questionnaire responses was conducted with identification of concepts based on frequency.

Results

Ten participants completed the study and had prestudy and poststudy data for analysis: 4 in PV and 6 in the control. All noncompleting participants were lost to follow up as they did not indicate preference to drop out of the study but did not show for study meetings nor notify staff of reasons for absence. No study-related adverse events were reported. Figure 2 provides an example of material elicited and discussed by participants in the PV and control groups, respectively. Actual participant names were replaced with pseudonyms by the researchers.

At baseline, PV participants had significantly higher BDI scores ($P = .018$), indicating more severe depression. Baseline BURNS and MARS scores were similar between groups ($P = .29$ and $.84$, respectively). At 8 weeks, the reduction in BURNS score in the PV group was significantly larger than the reduction in the control

TABLE 2: Depression, anxiety, and medication adherence outcome measures

	Photovoice (n = 4)			Control (n = 6)			P Value
	Prestudy	Poststudy	Mean Change by Individual	Prestudy	Poststudy	Mean Change by Individual	
Beck Depression Inventory	29	24.8	-6.7	18.6	19	0.2	.26
Burns Anxiety Inventory	53.3	44.8	-8.5	47	37.7	-2.6	.049
Medication Adherence Rating Scale	7.5	6.5	1	8	7.5	0.83	.16

group (-8.5 in the PV condition vs -2.6 for controls; $P=.049$). There was not a difference in the mean change of the BDI scores (-6.7 in the PV condition vs 0.2 among controls; $P=.26$) between groups at 8 weeks despite an overall mean reduction in the PV group. In both groups, MARS scores decreased from baseline to 8 weeks with no statistical difference between groups in the change in these scores (1 in the PV condition vs 0.83 in the control; $P=.16$; Table 2).

All completing participants in both conditions answered affirmatively to the question *Did you find the study process beneficial for your mental health?* When asked to describe which part(s) they felt were therapeutic, PV participants tended to comment about photo-taking and reflection, which helped to *make my feelings more concrete*, and control participants commented about the support found in the group environment, *which made me feel like I am not alone*. When asked to describe their least favorite aspect of the study, PV participants tended to cite preference for longer study participation, and control participants cited lack of focus/productivity of group discussions.

Discussion

Photovoice participants had significantly greater reductions in anxiety scores than those in the control group. This suggests the possibility that PV may be an effective approach for reducing anxiety symptoms when it is employed with college students for several possible reasons. First, it is possible that visual representation of concepts and feelings during the PV process allowed for greater emotional processing, leading to reductions in anxiety. Because of its incorporation of visual images, PV has been touted to lead to deeper connections with emotions and to “tap into a different part of human consciousness than do words-alone” approaches.^{29(p23)} This individual reflection process allows for significant self-examination and deep processing of experience.³⁰ Other PV work has shown enhanced emotional expressions, a greater healing impact,³¹ and safer space for sharing³² than traditional approaches that rely on nonvisual means of relaying information. An extension of this possibility, which was suggested to us by a PV participant, is that use of images allows the focus of group discussion to be about

a picture rather than on the individual, reducing anxiety and vulnerability associated with talking about symptoms and/or being in a group setting. This is consistent with research showing that reduced self-focused attention by increasing attention to things external to oneself can result in improvements in social anxiety symptoms.^{33,34} Hence, perhaps the PV participants experienced greater reductions in anxiety than usual care participants due to the ability to transfer their attention to their photographs and less on themselves. Unfortunately, we did not measure self-focused attention nor collect disease-specific diagnostic information about the presence or absence of social anxiety disorder, so these ideas can only be hypothesis generating. Additionally, the PV process often results in feedback from other participants, rhetorical questions on issues and experiences, and the formation of a collective stance on issues significant to participants based on discussion of how they view themselves and others.^{35,36} A sense of community forged by common experience and “opportunities to positively reframe meanings of their mental illness, medications, and lives” may also flow from group reflection sessions,^{18(p121)} which could further lend itself to reduced anxiety. It also is possible that use of an image as the focus point during group sessions allowed for more organization and productivity. This is supported by the qualitative finding that control participants felt group discussions were nonproductive, and PV participants did not. Finally, it is possible that PV participants were more likely to benefit regardless of the intervention employed because of their greater severity of baseline depression. However, lack of greater improvement in depression symptoms in the PV group compared with controls seems to contradict this notion. Further study is needed with larger samples to explore these ideas.

Completing participants reported poorer medication adherence at 8 weeks than at baseline with no difference between the PV and control groups. Participants in our sample may have been overreporting their adherence at baseline, which has been previously reported among adolescents and young adults with psychiatric illness.³⁷ Perhaps increased trust in therapists ensued over time during the 8-week study, leading to greater participant honesty in adherence reporting at study end. It is also

possible that, as participants learned more about their illness and aspects of their treatment through both the PV and usual care programming, they gained greater insight into their medication-taking behaviors, realizing they were more nonadherent than they had previously identified. It is also possible that, as participants engaged in group and individual nonpharmacologic therapies and as their symptoms improved, they felt their medications were of lower importance, leading to poorer adherence with them. This would be contradictory to our previous anecdotal findings associated with PV participation,²⁰ but it is not out of the question. Unfortunately, we did not collect information about reasons for nonadherence or employ an objective, nonself-report measure of medication adherence to further explore or validate these findings. Future studies should seek to examine these potential contributing factors.

The high participant attrition rate and low sample size are significant limitations of this work. Initially, participants were enthused to enroll and share their experience. However, nearly half of the participants did not return after their initial enrollment session. In our experience, attrition of this magnitude is common regardless of the type of mental health service being provided as a semester progresses and students become more stressed after the midterm period, often leading to lack of follow-through. In addition, attrition rates for group mental health services are often higher than individual sessions.¹⁵ Although we had hoped that the PV activity might be an approach that would overcome this barrier to group mental health services, this did not seem to be the case. We did not collect information about individual sessions that were also a part of both PV and usual care. Therefore, we cannot comment on any differences between individual sessions nor how they may have impacted the overall outcomes.

Conclusion

Photovoice may hold promise as a resource-efficient and effective intervention to reduce anxiety among college students with a mental illness, but it did not seem to promote greater retention of students in the campus counseling center, and it may have led to greater medication nonadherence. Further study with larger sample sizes is needed to replicate these findings.

References

- Hunt J, Eisenberg D. Mental health problems and help-seeking behavior among college students. *J Adolesc Health*. 2010;46(1):3-10. DOI: [10.1016/j.jadohealth.2009.08.008](https://doi.org/10.1016/j.jadohealth.2009.08.008). PubMed PMID: [20123251](https://pubmed.ncbi.nlm.nih.gov/20123251/).
- Bruffaerts R, Mortier P, Kiekens G, Auerbach RP, Cuijpers P, Demyttenaere K, et al. Mental health problems in college freshmen: prevalence and academic functioning. *J Affect Disord*. 2018;225:97-103. DOI: [10.1016/j.jad.2017.07.044](https://doi.org/10.1016/j.jad.2017.07.044). PubMed PMID: [28802728](https://pubmed.ncbi.nlm.nih.gov/28802728/); PubMed Central PMCID: [PMC5846318](https://pubmed.ncbi.nlm.nih.gov/PMC5846318/).
- Benton SA, Robertson JM, Tseng W-C, Newton FB, Benton SL. Changes in counseling center client problems across 13 years. *Prof Psych Res Pract*. 2003;34(1):66-72. DOI: [10.1037/0735-7028.34.1.66](https://doi.org/10.1037/0735-7028.34.1.66).
- Hyun JK, Quinn BC, Madon T, Lustig S. Graduate student mental health: needs assessment and utilization of counseling services. *J Coll Student Dev*. 2006;47(3):247-66. DOI: [10.1353/csd.2006.0030](https://doi.org/10.1353/csd.2006.0030).
- Prince JP. University student counseling and mental health in the United States: trends and challenges. *Ment Health Prev*. 2015;3(1-2):5-10. DOI: [10.1016/j.mhp.2015.03.001](https://doi.org/10.1016/j.mhp.2015.03.001).
- Gallagher RP. National Survey of College Counseling Centers 2014 [Internet; cited 2019 Apr 30]. Available from: <http://d-scholarship.pitt.edu/28178/>.
- Czyz EK, Horwitz AG, Eisenberg D, Kramer A, King CA. Self-reported barriers to professional help seeking among college students at elevated risk for suicide. *J Am Coll Health*. 2013;61(7):398-406. DOI: [10.1080/07448481.2013.820731](https://doi.org/10.1080/07448481.2013.820731). PubMed PMID: [24010494](https://pubmed.ncbi.nlm.nih.gov/24010494/); PubMed Central PMCID: [PMC3788673](https://pubmed.ncbi.nlm.nih.gov/PMC3788673/).
- Fortney JC, Curran GM, Hunt JB, Cheney AM, Lu L, Valenstein M, et al. Prevalence of probable mental disorders and help-seeking behaviors among veteran and non-veteran community college students. *Gen Hosp Psychiatry*. 2016;38:99-104. DOI: [10.1016/j.genhosppsych.2015.09.007](https://doi.org/10.1016/j.genhosppsych.2015.09.007). PubMed PMID: [26598288](https://pubmed.ncbi.nlm.nih.gov/26598288/); PubMed Central PMCID: [PMC5734055](https://pubmed.ncbi.nlm.nih.gov/PMC5734055/).
- Golberstein E, Eisenberg D, Downs MF. Spillover effects in health service use: evidence from mental health care using first-year college housing assignments. *Health Econ*. 2014;25(1):40-55. DOI: [10.1002/hec.3120](https://doi.org/10.1002/hec.3120). PubMed PMID: [25402364](https://pubmed.ncbi.nlm.nih.gov/25402364/).
- Sontag-Padilla L, Woodbridge MW, Mendelsohn J, D'Amico EJ, Osilla KC, Jaycox LH, et al. Factors affecting mental health service utilization among California public college and university students. *Psychiatr Serv*. 2016;67(8):890-7. DOI: [10.1176/appi.ps.201500307](https://doi.org/10.1176/appi.ps.201500307). PubMed PMID: [27032662](https://pubmed.ncbi.nlm.nih.gov/27032662/).
- Stanley IH, Hom MA, Joiner TE. Modifying mental health help-seeking stigma among undergraduates with untreated psychiatric disorders: a pilot randomized trial of a novel cognitive bias modification intervention. *Behav Res Ther*. 2018;103:33-42. DOI: [10.1016/j.brat.2018.01.008](https://doi.org/10.1016/j.brat.2018.01.008). PubMed PMID: [29428819](https://pubmed.ncbi.nlm.nih.gov/29428819/).
- Hammonds T, Rickert K, Goldstein C, Gathright E, Gilmore S, Derflinger B, et al. Adherence to antidepressant medications: a randomized controlled trial of medication reminding in college students. *J Am Coll Health*. 2015;63(3):204-8. DOI: [10.1080/07448481.2014.975716](https://doi.org/10.1080/07448481.2014.975716). PubMed PMID: [25338175](https://pubmed.ncbi.nlm.nih.gov/25338175/).
- Velligan DJ, Sajatovic M, Hatch A, Kramata P, Docherty JP. Why do psychiatric patients stop antipsychotic medication? A systematic review of reasons for nonadherence to medication in patients with serious mental illness. *Patient Prefer Adherence*. 2017;11:449-68. DOI: [10.2147/PPA.S124658](https://doi.org/10.2147/PPA.S124658). PubMed PMID: [28424542](https://pubmed.ncbi.nlm.nih.gov/28424542/); PubMed Central PMCID: [PMC5344423](https://pubmed.ncbi.nlm.nih.gov/PMC5344423/).
- Skoy E, Werremeyer A. Using photovoice to document living with mental illness on a college campus. *Clin Med Insights Psych*. 2019;10:e117955731882109. DOI: [10.1177/1179557318821095](https://doi.org/10.1177/1179557318821095).
- Denton L, Gross J, Wojcik C. Group counseling in the college setting: an international survey of center directors. *Int J Group Psychotherapy*. 2017;67(4):540-64. DOI: [10.1080/00207284.2016.1260458](https://doi.org/10.1080/00207284.2016.1260458).
- Sitvast JE, Abma TA, Widdershoven GAM. Facades of suffering: clients' photo stories about mental illness. *Arch Psychiatr Nurs*. 2010;24(5):349-61. DOI: [10.1016/j.apnu.2010.02.004](https://doi.org/10.1016/j.apnu.2010.02.004). PubMed PMID: [20851326](https://pubmed.ncbi.nlm.nih.gov/20851326/).
- Wang C, Burriss MA. Photovoice: concept, methodology, and use for participatory needs assessment. *Health Educ Behav*. 1997;

- 24(3):369-87. DOI: [10.1177/109019819702400309](https://doi.org/10.1177/109019819702400309). PubMed PMID: [9158980](https://pubmed.ncbi.nlm.nih.gov/9158980/).
18. Han CS, Oliffe JL. Photovoice in mental illness research: a review and recommendations. *Health (London)*. 2016;20(2):110-26. DOI: [10.1177/1363459314567790](https://doi.org/10.1177/1363459314567790). PubMed PMID: [25673051](https://pubmed.ncbi.nlm.nih.gov/25673051/); PubMed Central PMCID: [PMC4768711](https://pubmed.ncbi.nlm.nih.gov/PMC4768711/).
 19. Werremeyer AB, Aalgaard-Kelly G, Skoy E. Using photovoice to explore patients' experiences with mental health medication: a pilot study. *Ment Health Clin [Internet]*. 2016;6(3):142-53. DOI: [10.9740/mhc.2016.05.142](https://doi.org/10.9740/mhc.2016.05.142). PubMed PMID: [29955462](https://pubmed.ncbi.nlm.nih.gov/29955462/); PubMed Central PMCID: [PMC6007651](https://pubmed.ncbi.nlm.nih.gov/PMC6007651/).
 20. Werremeyer A, Skoy E, Aalgaard Kelly G. Use of photovoice to understand the experience of taking psychotropic medications. *Qual Health Res*. 2017;27(13):1959-69. DOI: [10.1177/1049732317693221](https://doi.org/10.1177/1049732317693221). PubMed PMID: [29088990](https://pubmed.ncbi.nlm.nih.gov/29088990/).
 21. Phase 3: Collecting and Analyzing Data [Internet]. NACCHO [cited 2020 Jan 6]. Available from: <https://www.naccho.org/programs/public-health-infrastructure/performance-improvement/community-health-assessment/mapp/phase-3-the-four-assessments>
 22. Yalom ID. *The theory and practice of group psychotherapy*. 5th ed. New York: Basic Books; 2005.
 23. Beck AT, Steer RA, Ball R, Ranieri W. Comparison of Beck Depression Inventories -IA and -II in psychiatric outpatients. *J Pers Assess*. 1996;67(3):588-97. DOI: [10.1207/s15327752jpa6703_13](https://doi.org/10.1207/s15327752jpa6703_13). PubMed PMID: [8991972](https://pubmed.ncbi.nlm.nih.gov/8991972/).
 24. Burns DD. *The feeling good handbook*. Revised edition. New York: Plume; 1999.
 25. Fialko L, Garety PA, Kuipers E, Dunn G, Bebbington PE, Fowler D, et al. A large-scale validation study of the Medication Adherence Rating Scale (MARS). *Schizophr Res*. 2008;100(1-3):53-9. DOI: [10.1016/j.schres.2007.10.029](https://doi.org/10.1016/j.schres.2007.10.029). PubMed PMID: [18083007](https://pubmed.ncbi.nlm.nih.gov/18083007/).
 26. Lizer MH. The impact of a pharmacist assisted clinic upon medication adherence and quality of life in mental health patients. *Ment Health Clin [Internet]*. 2013;2(8):236-9. DOI: [10.9740/mhc.n133114](https://doi.org/10.9740/mhc.n133114).
 27. Belzeaux R, Correard N, Boyer L, Etain B, Loftus J, Bellivier F, et al. Depressive residual symptoms are associated with lower adherence to medication in bipolar patients without substance use disorder: results from the FACE-BD cohort. *J Affect Disord*. 2013;151(3):1009-15. DOI: [10.1016/j.jad.2013.08.028](https://doi.org/10.1016/j.jad.2013.08.028). PubMed PMID: [24051101](https://pubmed.ncbi.nlm.nih.gov/24051101/).
 28. Fond G, Boyer L, Boucekine M, Aden LA, Schürhoff F, Tessier A, et al. Validation study of the Medication Adherence Rating Scale. Results from the FACE-SZ national dataset. *Schizophr Res*. 2017;182:84-9. DOI: [10.1016/j.schres.2016.10.023](https://doi.org/10.1016/j.schres.2016.10.023). PubMed PMID: [27789187](https://pubmed.ncbi.nlm.nih.gov/27789187/).
 29. Harper D. Talking about pictures: a case for photo elicitation. *Vis Stud*. 2002;17(1):13-26. DOI: [10.1080/14725860220137345](https://doi.org/10.1080/14725860220137345).
 30. Wagner PE, Ellingson LL, Kunkel A. Pictures, patience, and practicalities: lessons learned from using photovoice in applied communication contexts. *J Appl Commun Res*. 2016;44(3):336-42. DOI: [10.1080/00909882.2016.1192292](https://doi.org/10.1080/00909882.2016.1192292).
 31. Power NG, Norman ME, Dupré K. Rural youth and emotional geographies: how photovoice and words-alone methods tell different stories of place. *J Youth Stud*. 2014;17(8):1114-29. DOI: [10.1080/13676261.2014.881983](https://doi.org/10.1080/13676261.2014.881983).
 32. Woodgate RL, Zurba M, Tennent P. Worth a thousand words? Advantages, challenges and opportunities in working with photovoice as a qualitative research method with youth and their families. *Forum Qual Soc Res*. 2017;18(1):Article 2. DOI: [10.17169/fqs-18.1.2659](https://doi.org/10.17169/fqs-18.1.2659).
 33. Mörtberg E, Hoffart A, Boecking B, Clark DM. Shifting the focus of one's attention mediates improvement in cognitive therapy for social anxiety disorder. *Behav Cogn Psychother*. 2015;43(1):63-73. DOI: [10.1017/S1352465813000738](https://doi.org/10.1017/S1352465813000738). PubMed PMID: [23981858](https://pubmed.ncbi.nlm.nih.gov/23981858/); PubMed Central PMCID: [PMC5091738](https://pubmed.ncbi.nlm.nih.gov/PMC5091738/).
 34. Norton AR, Abbott MJ. Self-focused cognition in social anxiety: a review of the theoretical and empirical literature. *Behav Change*. 2016;33(1):44-64. DOI: [10.1017/bec.2016.2](https://doi.org/10.1017/bec.2016.2).
 35. Keller C, Fleury J, Perez A, Ainsworth B, Vaughan L. Using visual methods to uncover context. *Qual Health Res*. 2008;18(3):428-36. DOI: [10.1177/1049732307313615](https://doi.org/10.1177/1049732307313615). PubMed PMID: [18235165](https://pubmed.ncbi.nlm.nih.gov/18235165/).
 36. Garber MC, Nau DP, Erickson SR, Aikens JE, Lawrence JB. The concordance of self-report with other measures of medication adherence. *Med Care*. 2004;42(7):649-52. DOI: [10.1097/01.mlr.0000129496.05898.02](https://doi.org/10.1097/01.mlr.0000129496.05898.02). PubMed PMID: [15213489](https://pubmed.ncbi.nlm.nih.gov/15213489/).
 37. Goldstein TR, Krantz ML, Fersch-Podrat RK, et al. A brief motivational intervention for enhancing medication adherence for adolescents with bipolar disorder: a pilot randomized trial. *J Affect Disord*. 2020;265:1-9. DOI: [10.1016/j.jad.2020.01.015](https://doi.org/10.1016/j.jad.2020.01.015). PubMed PMID: [31957686](https://pubmed.ncbi.nlm.nih.gov/31957686/).