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PEER OUTCOMES PILOT / INTEGRAL CARE

Peer Services and Individual Outcomes

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Background

History of the Recovery Movement

Prior to the 1940s, advocates for the idea of recovery from mental health and substance use issues were independent and sparse. From midcentury on, the confluence of various organizations, publications, the civil rights movement, and individual leaders drove the effort to promote that people can and do recover (Chamberlain, 1990; International Mental Health Collaborating Network, 2019; Oak, 2006). The resulting Consumer/Survivor/Ex-Patient Movement transcended the boundaries between mental health, substance use, and homelessness system silos, advocating for policy and systems change. Pioneers forged advocacy groups in the 1970s (e.g., the *Mental Patients' Liberation Front*), endorsing mental health, substance use, and homelessness recovery (Chamberlain, 1990).

Recovery has since become the paradigm for behavioral healthcare in the United States. The Substance Abuse and Mental Health Services Administration (SAMHSA, 2015) offers a definition of recovery that encompasses both mental health and substance use: "a process of change through which individuals improve their health and wellness, live a self-directed life and strive to reach their full potential" (para. 2). The President's New Freedom Commission on Mental Health (2003) named recovery the organizing principle for the transformation of mental health services and the expected outcome of mental health services and Recovery Oriented Systems of Care (ROSC) as the infrastructure to effectively address substance use (SAMHSA, 2015).

The Case for Peer Support Services

The recovery movement would come to lay the foundation for a peer support workforce (Ostrow & Adams, 2012). Peer support providers are people in recovery from mental health and/or substance use concerns who are employed to share their experiences to promote the recovery of others impacted by similar concerns. Peer providers are not clinicians. Their role is to supplement clinical services by engaging individuals in their own care and health services, and help them navigate "complex and fragmented systems" (Davidson et al., 2018, p. 2).

Research suggests that peers may influence recovery outcomes through services such as supporting recovery planning, providing group and one-to-one peer support, assisting with Wellness Recovery Action Planning (WRAP), providing practical daily life support, and advocating for individuals to other service providers (Chinman et al., 2015; Jonikas et al., 2013; Mahlke et al., 2017; Rogers et al., 2016; Salzer et al., 2016). While these types of services could be delivered by other types of providers, peers are better equipped "to inspire hope, destigmatize mental illness, and empathically support" the people they serve because of their personal lived experience with mental health concerns and receiving services (Oh & Rufener, 2017, p. 424). The provision of practical supports, role modeling, mentoring, social opportunities, and emotional support, when provided through the normalizing relationship with someone who has shared experiences may be the most effective aspect of the peer relationship (Gidugu et al., 2015).

Research that supports the provision of mental health peer support services is promising. First generation papers, meta-analyses, and systematic reviews suggest that peer support services may influence individual outcomes including:

- Reduced use of inpatient and emergency services (Sledge et al., 2011; Clarke et al., 2000)

- Better psychiatric and social functioning (van Vugt, Kroon, Delespaul, & Mulder, 2012)
- Reductions in mental health/psychiatric symptoms (Barker & Maguire, 2017; Resnick & Rosenheck, 2008)
- Fewer homeless days (van Vugt et al., 2012; Bean, Shafer, & Glennon, 2013; Boisvert, Martin, Grosek, & Clarie, 2008)
- Greater use of wellness tools and awareness of symptom triggers (Cook et al., 2010)
- Better social support system (Cook et al., 2010; Bean et al., 2013)
- Reduced involvement with criminal justice system (Bean et al., 2013)
- Increased satisfaction with finances and employment (Weissman, Covell, Kushner, Irwin, & Essock, 2005)
- Increased life satisfaction, greater quality of life (Weissman et al., 2005)
- Improved relationship with providers, better engagement with care, higher levels of patient activation, increased levels of empowerment and hopefulness for recovery (Davidson et al., 2018)
- Decreased substance use (O'Connell et al., 2018)
- Increased self-sufficiency (Mahlke et al., 2017).

There is a paucity of research examining the potential benefits of peer support on family life. A model of family peer support exists, where family members with lived experience caring for a child with emotional or behavioral health needs assist other parents and caregivers in similar situations (Lopez, 2013). Evidence suggests that the family peer support model has a positive impact on family engagement, parental anxiety, and service retention (Lopez, 2013). It remains to be seen if traditional peer support has similar benefits for families. It may be that traditional peer support services have a positive effect on family unit stability and parental engagement by improving the psychiatric functioning, social support, and quality of life of parents who receive those services.

Purpose

The Texas Health and Human Services Commission (HHSC) contracted with the Texas Institute for Excellence in Mental Health (TIEMH) to assess the effect of peer support services, delivered through various organizations in Texas, on individual mental health and homelessness outcomes. The current evaluation examined the outcomes of people who were experiencing homelessness (e.g., life functioning and risk behaviors), who received peer services through the Healthy Community Collaborative (HCC) project at Integral Care. Findings may be used to guide future program development and will build upon the existing literature on peer support service outcomes.

Healthy Community Collaborative at Integral Care

The goals of the HCC project are to house and fully coordinate recovery-oriented care for persons who are homeless and experiencing behavioral health (mental health or co-occurring substance use and mental health) issues through coordinated assessment and collaboration among service providers in local communities. The main objectives of the project are to implement coordinated assessment, engage clients in mental health and wraparound services, house the most vulnerable persons in Permanent Supportive Housing (PSH), and manage data quality for analysis. The Texas Health and Human Services Commission (HHSC) is the state agency administrator of the HCC project. Organizations, including Integral Care, that contract with HHSC to carry out the HCC project are responsible for involving community partners and building/promoting a local collaborative.

Integral Care provides HCC services with a staff of 33. Integral Care has seven community partners, including the Ending Community Homelessness Coalition (ECHO), Family Eldercare, Communities for Recovery, Community Care, Homelessness Advisory Committee of Austin (HACA), Travis County Sheriff's Office, and Mobile Loaves and Fishes (Community First). HCC staff at Integral Care receive training in Motivational Interviewing, tobacco

cessation, using the Adult Needs and Strengths Assessment (ANSA) in care planning, Illness Management and Recovery, self-care and managing trauma exposure, staff safety, best practices in transporting clients, the PSH toolkit, needle disposal, recognizing internalized shame, and resiliency and the power of positivity.

To be enrolled in the HCC program at Integral Care, an individual must currently have unstable housing and have a mental health need, where level of impairment is the measure of need, not diagnosis. Services provided by the HCC program include skills training (with a focus on preparing for housing), case management, landlord outreach, medication management, peer support, group and individual counseling, monetary assistance, referrals, survivors of abuse recovery (SOAR) support, jail liaison, mental health follow-up care, education on symptom management, referrals to detoxification and in-patient substance use treatment, Motivational Interviewing, co-occurring psychiatric and substance abuse disorders (COPSD) services, health care, education, and job training.

Evaluation Questions

This evaluation focused on measuring the outcomes of individuals who received peer services through the HCC project at Integral Care. Available outcomes data included Adult Needs and Strengths Assessment (ANSA) scores. The ANSA is comprised of questions related to nine domains, including family strengths and needs, risk behaviors, life functioning, and crisis history. Items on the ANSA are rated numerically, and scores can be compared over time to assess outcomes/improvements. Key measures from the ANSA were selected, as they were theoretically associated with peer services.

Question 1: Do individual outcomes, measured by the ANSA, change during the course of HCC Integral Care program enrollment?

Question 2: Do individuals who receive peer services show greater improvement in ANSA domain and item scores, relative to individuals who do not receive peer services?

Methods

Measures

Data were collected for all HCC enrollees from the beginning of the program in 2014 until the fourth fiscal quarter of 2018. Outcome measures were selected from the Adult Needs and Strengths Assessment (ANSA), including risk behaviors, behavioral health needs, strengths, and life functioning. For every HCC enrollee, an ANSA is completed at intake and every 6 months during enrollment in the program. Peer service use data was also collected. For every enrollee, receipt of peer services was reported on a quarterly basis, for 17 quarters, at a categorical level: 1) yes, received peer services; 2) no, did not receive peer services.

ANSA

The ANSA (DSHS, 2016) is a multi-purpose assessment tool, with established reliability and validity. It was developed to assist clinicians in planning treatment for individuals. It can be used to assign a level of care and monitor individual outcomes, as well as for organizational quality improvement efforts. It connects the assessment process to the creation of individualized service plans, through communication, to establish a shared vision by the individual in services and all levels of the care system in which it is used (Lyons & Fernando, 2017).

The ANSA includes 61 core items that rate an individual's needs and strengths across eight domains: risk behaviors, behavioral health needs, life functioning, family/caregiver strengths and needs, strengths, culture, history of psychiatric hospitalizations, and crisis episodes. The ANSA also includes the following extension modules, associated with nine of the core items: suicide risk, dangerousness, sexually aggressive behavior, trauma, substance use, physical/medical, vocational/career, and developmental needs. A high rating (1, 2, or 3) on one of those nine core items indicate that the corresponding extension module should be completed.

Items on the ANSA are rated on a four-point scale, from 0 to 3. For needs items, higher numbers indicate a more pressing concern. For strengths items, higher numbers indicate an undersized strength that is indicated for development. For both types of items, lower scores are better. Item ratings suggest different actions regarding service planning. The ANSA helps individuals and providers understand which needs are most pressing, and which strengths can be used or built upon. See Table 1 (derived from Lyons & Walton, 1999) for the rating interpretations for strengths and needs items.

Table 1. Rating interpretations for needs and strengths ANSA items.

Item Rating	Needs Items - Rating Interpretation	Strengths Items - Rating Interpretation
0	**No evidence**: no action needed	**Centerpiece**: central to planning
1	**Significant history**: watchful waiting, prevention	**Present**: may be useful in care planning
2	**Interferes with functioning**: intervention required	**Identified**: must be built or developed
3	**Dangerous or disabling**: Immediate action required	**Not identified**: strength creation indicated

The ANSA can be used to measure outcomes by monitoring change over time; individuals show improvement when scores of 2 or 3 on an item (higher need or unidentified strength) drop to a score of 0 or 1 (resolved need, built strength). Additionally, "dimension" scores can be calculated by summing items within each domain. Dimension scores can also be monitored over time to determine improvements, shown by decreases in dimension scores (Lyons & Fernando, 2017; Lyons & Walton, 1999). For the current evaluation, select ANSA items across domains were chosen for analysis based on their theoretical relationship to peer support services.

Analysis

Individual peer service data were matched with ANSA data using client identification numbers from the Homeless Management Information System (HMIS) and associated numbers from the Clinical Management for Behavioral Health Services (CMBHS) system. CMBHS is a database operated by HHSC, used by state-contracted community mental health and substance use service providers in support of data exchange across organizations. HMIS is a web-based software system operated by the U.S. Department of Housing and Urban Development (HUD), used to collect client-level data and data on the provision of housing services in order to coordinate care among many organizations that serve individuals experiencing homelessness.

Baseline scores on the ANSA assessment were gathered. The window of a person's six month follow-up assessment was then calculated. Individuals whose first follow-up ANSA occurred within 45 days of the prescribed 6-month window for reassessment (between 135-225 days of baseline) were included in the analyses (N = 479). The following ANSA domain scores were averaged and reported for the two groups (peer services and no peer

services) at both time points (baseline and follow-up): risk behaviors, behavioral health needs, life functioning, strengths, and psychiatric hospitalizations and crisis history. One item from the psychiatric hospitalizations history domain (number of hospitalizations in the past 180 days) was combined with the single item from the crisis history domain (number of psychiatric crises episodes in the past 90 days) for analysis. The difference between mean scores at baseline and follow-up were compared between the two groups for each domain.

ANSA item ratings were categorized: ratings of 0 or 1 on either type of item were labeled a strength and ratings of 2 or 3 on either type of item were labeled a need. Item change from baseline to follow up was divided into four categories: strength → need (indicating decline), need → remained, strength → remained, and need → strength (indicating improvement). Table 2 defines the categories of change for ANSA items from baseline to six month follow-up. Category changes from baseline to follow-up were examined for the two groups for select items within each domain, theorized to vary with the receipt of peer services.

Table 2. Change categories and definitions.

Change Category	Definition of Change Category
Strength → Need	From baseline to 6-months, ANSA item score changed from a 0-1 to a 2-3
Need → Remained	From baseline to 6-months, ANSA item score remained a 2-3
Strength → Remained	From baseline to 6-months, ANSA item score remained a 0-1
Need → Strength	From baseline to 6-months, ANSA item score changed from a 2-3 to a 0-1

Results

A total of 479 individuals met the inclusion criteria (matching HMIS and CMBHS IDs, multiple ANSA assessments, and first follow-up assessment within 135-225 days of baseline assessment) and were included in the analysis. Of these, 289 (60.3%) received no peer services and 190 (39.7%) received peer services in at least one quarter that was reported. The number of quarters in which an individual received peer services ranged from 1 (15.4%) to all 17 that were reported (0.2%).

According to their CMBHS profile, the majority of individuals included in the analysis were male (58.7%) and non-Hispanic (97.9%). Additionally, most individuals identified as white (57.8%) or black or African American (37.6%). Other races that were identified included multiracial or unspecified (2.7%), American Indian or Alaskan Native (1.0%), and Asian and Native Hawaiian or other Pacific Islander (0.4% each). The demographics of the overall sample and peer services sample were similar. Male gender was slightly over-represented in the sample that received peer services (60.5%), compared with the overall sample. Among the peer services group, it was also slightly more common to be Hispanic (3.7%) and/or white (63.2%) in ethnicity and race compared to the overall sample, respectively.

The ANSA includes a question about the respondent's type of residence. Options for response include: 1) Independent/Dependent in Family Home/Supported Housing, 2) Group Home/Assisted Living/Treatment-Training-Rehab Center, 3) Nursing Home/Intermediate Care Facility (ICF)/Hospital, 4)Homeless (Literally/Marginally Homeless), 5) Correctional Facility, 6) Foster Care, or 7) Other. Almost half (48.4%) of individuals included in the

overall sample were homeless at baseline. This dropped to less than one-third (32.6%) at six month follow-up. This corresponded with an increase in individuals identifying independent, family, or supported housing as their main residence type, from 35.3% at baseline to 54.9% at six month follow up. Among individuals who received peer services, the percent of individuals that reported being homeless decreased from 51.6% at baseline to 34.7% at follow-up (-16.9%). This was a greater percentage point decrease compared to those who did not receive peer services (N = 289), who went from 46.4% at baseline to 31.1% at follow-up (-15.3%). See Table 3 for a description of the types of housing that were reported at baseline and six month follow-up for the overall sample.

Table 3. Type of housing reported at baseline and six month follow-up (total sample).

Type of Housing	**% Baseline**	**% Follow-Up**
Homeless	48.4	32.6
Independent, dependent in family home, or supported housing	35.3	54.9
Group home, assisted living, treatment- training- or rehab center	13.2	10.6
Nursing home, intermediate care facility, or hospital	1.3	0.8
Other	1.7	0.2
Correctional facility	0.2	0.8

The ANSA also asks about employment status. There are four types of employment options an individual can report: 1) independent, competitive, supported, or self-employment; 2) transitional or sheltered employment; 3) unemployed but wants or needs work; and 4) not in labor force, including receiving SSI/SSDI, retired, and stay at home parent, among other options. At baseline, none of the people included in the analysis reported that they were in transitional or sheltered employment. Most individuals reported that they were not in the labor force (68.1%), followed by unemployed but wants or needs work (21.7%) and independently employed (10.2%).

In the overall sample, from baseline to follow-up the percent of individuals who reported that they were independently or competitively employed dropped slightly, to 9.8%. However, those who received peer services who were independently employed decreased from 8.9% to 5.8% at follow-up, whereas those who did not receive peer services increased, from 11.1% to 12.5% at follow-up. The percent of individuals who received peer services who reported that they were not in the labor force increased from 64.7% at baseline to 71.1% at follow-up. The percent of individuals who reported they were not in the labor force in the no peer services group remained the same from baseline to follow-up, at 70.2%. See Table 4 for a description of the employment types that were reported at baseline and six month follow-up.

Table 4. Status of employment reported at baseline and six month follow-up (total sample).

Status of Employment	% Baseline	% Follow-Up
Not in labor force	68.1	70.6
Unemployed but wants or needs work	21.7	19.6
Independent	10.2	9.8
Transitional or sheltered employment	0.0	0.8

Risk Behaviors

On the risk behaviors domain (comprised of items related to suicide risk, dangerousness to others, self-injurious behaviors, harm to self or others, exploitation, gambling, sexually aggressive behavior, and criminal behaviors), mean scores on the domain increased slightly, from an average of 2.55 (*SD* = 2.00) at baseline to an average of 2.68 (*SD* = 2.14) at follow-up, indicating that risk had increased at follow-up. This was true both for the peer services and no peer services groups. Average domain score was slightly higher at baseline and follow-up for the peer services group; however, the no peer services group had a larger increase in mean score (+ 0.18) relative to the no peer services group (+ 0.07) from baseline to follow-up. It should be noted that this domain has a maximum possible score of 24, so a mean score of 2.68 at follow up is very low. See Table 5 for a description of all domain score changes, including the behavioral health needs domain, for both groups (peer services and no peer services) from baseline to follow-up.

From the risk behaviors domain, three items were examined to determine the percent of individuals in each group that moved from or stayed within each category: suicide risk, self-injurious behavior, and criminal activity. No individual in the total sample was ranked a 2 or 3 (indicating a need) on the item on suicide risk at either baseline or follow-up. Thus, for this item, no individual moved from the category of strength → need, need → remained, nor need → strength. All individuals fell into the category of strength → remained. In the peer services group, 82.1% had no change in score from baseline to follow-up, 7.4% were rated lower need at follow-up (from a 1 to a 0) and 10.5% were rated higher at follow-up (from a 0 to a 1, indicating more risk). From the no peer services group, 82.4% of individuals remained at the same level of risk from baseline to follow-up, 4.5% had a decrease in rating (from a 1 to a 0), and 13.1% had an increase in rating (from a 0 to a 1, indicating more risk). See Tables 6 and 7 for a description of the percent of individuals from each group (peer services and no peer services, respectively) that fell within each category of change (e.g., strengths → needs, or needs → remained, etc.) for risk behaviors items.

Ratings on self-injurious behavior were generally low, overall (see Tables 6 and 7). From baseline to follow up, 97.1% of the total sample remained in the same category (strength or need) from baseline to follow up. Of the total sample, 1.5% moved from a strength to a need (increased risk/rating from a 0-1 to a 2-3) and 1.5% moved from a need to a strength (decreased risk/rating from a 2-3 to a 0-1) from baseline to follow-up. For the peer group, a greater percentage of individuals moved from a strength to a need (2.6%) compared to the no peer services group (0.7%).

Table 5. Mean domain score changes for peer services (N = 190) and no peer services (N = 289) groups, from baseline to 6-month follow-up.

ANSA Domain (domain score range)	**Peer Baseline** *M* (*SD*)	**Peer Follow-Up** *M* (*SD*)	**Peer Difference** Change	**No Peer Baseline** *M* (*SD*)	**No Peer Follow-Up** *M* (*SD*)	**No Peer Difference** Change
Risk Behaviors (8 items; score range 0-24)	2.94 (2.08)	3.01 (2.33)	+ 0.07	2.29 (1.91)	2.47 (1.98)	+ 0.18*
Behavioral Health Needs (12 items; score range 0-36)	10.12 (4.38)	2.94 (2.08)	- 7.18**	9.10 (3.99)	2.29 (1.91)	- 6.81**
Life Functioning (15 items; score range 0-45)	15.37 (6.78)	14.41 (6.79)	- 0.96**	12.92 (6.35)	12.71 (6.24)	- 0.21
Strengths (11 items; score range 0-33)	20.33 (5.29)	19.52 (5.25)	- 0.81**	19.96 (5.57)	19.53 (5.67)	- 0.43
Psychiatric Hospitalizations and Crisis History (2 items; score range 0-6)	0.99 (1.36)	0.79 (1.41)	- 0.20*	0.52 (1.09)	0.51 (0.98)	- 0.01

*Note: * indicates a significant difference from baseline to follow up at the p < .05 level, for that domain and sub-group. ** indicates a significant difference at the p < .01 level.*

Ratings on the item related to criminal behavior for both groups primarily remained the same from baseline to follow-up (91.6%; see Tables 6 and 7). Fewer people from the overall sample progressed from a need to a strength (2.9%) than went from a strength to a need (5.4%). For the peer services group, 91.0% remained in the same category: 88.9% in the strength category and 2.1% in the need category. A greater percentage of individuals from the peer services group were rated lower at follow-up (indicating less risk) on criminal behavior (3.2%) than from the no peer services group (2.8%). This corresponded with a reduction in the percentage of individuals who stayed in the need category in the peer services group (2.1%), relative to the no peer services group (2.8%). However, the no peer services group had a lower rate of moving from a strength to a need (5.2%) relative to the peer services group (5.8%).

Table 6. ANSA risk behaviors item scores: Status change from baseline to 6-month follow up for peer services group (N = 190).

ANSA Item	Strength → Need (%)	Need → Remained (%)	Strength → Remained (%)	Need → Strength (%)
Item: Suicide risk	0.0	0.0	100.0	0.0
Item: Self-injurious behavior	2.6	1.6	95.3	0.5
Item: Criminal behavior	5.8	2.1	88.9	3.2

Table 7. ANSA risk behavior item scores: Status change from baseline to 6-month follow up for no peer services group (N = 289).

ANSA Item	Strength → Need (%)	Need → Remained (%)	Strength → Remained (%)	Need → Strength (%)
Item: Suicide risk	0.0	0.0	100.0	0.0
Item: Self-injurious behavior	0.7	1.0	96.2	2.1
Item: Criminal behavior	5.2	2.8	89.3	2.8

Behavioral Health Needs

Overall, the average behavioral health needs domain score dropped significantly for the entire sample ($N = 479$), from an average of 9.50 ($SD = 4.18$) at baseline to 2.55 ($SD = 2.00$) at follow-up, $t = 45.92$, $p < 0.001$. The total score possible for this domain ranged from 0-36. The group of individuals who received peer services ($N = 190$) had a greater reduction in mean score from baseline to follow up (-7.18 points) compared with the group that did not receive peer services ($N = 289$; -6.81), indicating improvement on this domain. The decrease in score for both groups was statistically significant, $t(189) = 28.91$, $p < .001$ for peer services group and $t(288) = 35.72$, $p < .001$ for the no peer services group. The group who received peer services had a slightly higher average score, both at baseline ($M = 10.12$, $SD = 4.38$) and follow-up ($M = 2.94$, $SD = 2.08$) relative to the group that did not receive peer services ($M = 9.10$, $SD = 3.99$ at baseline and $M = 2.29$, $SD = 1.91$ at follow-up). See Table 5 for a description of all domain score changes, including the behavioral health needs domain, for both groups (peer services and no peer services) from baseline to follow-up.

From the behavioral health domain, five items were examined to determine the percent of individuals in each group that moved from or stayed within each category: impulse control, interpersonal problems, antisocial behavior, adjustment to trauma, and substance use. For the item related to impulse control, a higher percentage of individuals from the peer services group improved from a need to a strength from baseline to follow up (13.2%) than did in the no peer services group (5.9%). However, the peer services group also saw a greater percentage of individuals move from a strength to a need from baseline to follow-up (9.5%) on this item than the no peer services group (6.9%). There was more variability in the peer services group, where 77.4% of individuals maintained their baseline status (either need or strength) at follow-up than in the no peer services group, where 87.2% did so.

For the item on interpersonal problems, just over 75% of individuals in the overall sample stayed in the strengths category from baseline to follow-up. An equal number of people changed from a strength to a need (8.4%) and remained in the need category (8.4%). Overall, 7.5% of individuals went from a need to a strength, indicating fewer interpersonal problems. Of those 7.5% that saw improvement on this item, the same number of individuals were from the peer services and no peer services groups. However, the peer services group was smaller in size, so 9.5% of people from the peer services group improved to a strength from a need relative to 6.2% of the no peer services group. The no peer services group was slightly more likely to move from the strength to the need category (8.7%), indicating increased interpersonal problems, than the peer services group (7.9%).

In terms of antisocial behavior, there was little change from baseline to follow-up for the total sample. From both groups, most individuals stayed within the same category of either strengths or needs (95.6%). The percentage of individuals who went from a need to a strength was approximately the same in both the peer services and no peer services groups (2.4-2.6%), as was the percentage of individuals who stayed within the need category (1.6-1.7%). However, a smaller percentage of individuals from the peer services group changed from a strength to a need (1.1%), indicating worsening antisocial behavior, than did from the no peer services group (2.4%).

For the adjustment to trauma item, overall 88.5% of individuals remained in the same category at follow-up from baseline; 70.4% remained in the strength category and 15.4% remained in the need category. Slightly more individuals overall moved from a need to a strength (8.1%), indicating improvement, than moved from a strength to a need (6.1%). In terms of sub groups, approximately the same percent of individuals from the peer services and no peer services groups remained in the strength category (70.0% and 70.6%, respectively). The percentage of individuals that went from a strength to a need (indicating reduced adjustment to trauma) between the two groups was also very similar, though slightly higher in the no peer services group (6.2%) than the peer services group (5.8%). On the trauma adjustment item, what differed between the two groups most was that the percentage of individuals who remained in the need category for the peer services group was much higher (17.9%) than in the no peer services group (13.8%). This corresponded with a lower percentage of the peer services group moving from a need to a strength (6.3%), indicating improvement, relative to the no peer services group (9.3%). At baseline, the percentage of individuals in each group that were rated as a 2 or 3, indicating a need in terms of adjustment to trauma, was only slightly higher in the peer services group (24.2%) than in the no peer services group (23.2%). These findings suggest that there is room to further assist individuals adjusting to trauma through the delivery of peer services.

On the item on substance use, at baseline the percentage of individuals in the peer services group who were scored a 2 or a 3, putting them in the category of need, was over twice as high (32.2%) as in the no peer services group (15.3%). In the overall group, 82.9% of individuals remained in the same category at baseline and follow up; 70.8% remained in the strength category and 12.1% remained in the need category. In the peer services group, 18.4% of individuals remained in the needs category and 59.5% remained in the strengths category. A total of 9.8% of individuals from both groups moved from a need to a strength, indicating improvement. Individuals from the peer services group moved from a need to a strength, indicating improvement, at a higher rate (13.7%) than the group that did not receive peer services (7.3%). This finding suggests that peer services had a positive impact on substance use.

See Tables 8 and 9 for a description of the percent of individuals from each group (peer services and no peer services, respectively) that fell within each category of change (e.g. strengths → needs, or needs → remained, etc.) for behavioral health needs items.

Table 8. ANSA behavioral health needs item scores: Status change from baseline to 6-month follow-up for peer services group (n = 190).

ANSA Item	Strength → Need (%)	Need → Remained (%)	Strength → Remained (%)	Need → Strength (%)
Item: Impulse Control	9.5	10.0	67.4	13.2
Item: Interpersonal Problems	7.9	10.0	72.6	9.5
Item: Antisocial Behavior	1.1	1.6	94.7	2.6
Item: Adjustment to Trauma	5.8	17.9	70.0	6.3
Item: Substance Use	8.4	18.4	59.5	13.7

Table 9. ANSA behavioral health needs item scores: Status change from baseline to 6-month follow up for no peer services group (n = 289).

ANSA Item	Strength → Need (%)	Need → Remained (%)	Strength → Remained (%)	Need → Strength (%)
Item: Impulse Control	6.9	9.0	78.2	5.9
Item: Interpersonal Problems	8.7	7.3	77.9	6.2
Item: Antisocial Behavior	2.4	1.7	93.4	2.4
Item: Adjustment to Trauma	6.2	13.8	70.6	9.3
Item: Substance Use	6.6	8.0	78.2	7.3

Life Functioning

There was little change on the life functioning domain on overall scores from baseline to follow-up. On average, both groups decreased less than 1 point on a scale from 0-45 after six months. The group that received peer services decreased an average score of 0.96 points, from a 15.37 (SD = 6.78) to a 14.41 (SD = 6.79) indicating a slight improvement on this domain, which was statistically significant, $t(189) = 2.63$, $p < .01$. The group that received no peer services also had a slight reduction in score, 0.21 points, from an average of 12.92 (SD = 6.35) at baseline to an average of 12.71 (SD = 6.24) at follow-up, which was not statistically significant. See Table 5 for a description of all domain score changes, including the life functioning domain, for both groups (peer services and no peer services) from baseline to follow-up. From the life functioning domain, seven items were examined to determine the percent of individuals in each group that moved from or stayed within each category: family functioning, employment, social functioning, recreational activities, living skills, residential stability, self-care, and involvement in recovery.

Overall, just over half of the total sample was rated in the strength category at baseline for the item on family functioning (54.9%); the remaining 45.1% of the sample was rated as needing in this area. From baseline to follow-up, 15.2% of all individuals progressed from a need to a strength on this item, indicating improvement. Among the peer services group, individuals were more likely to be rated as a 2 or 3 on this item at baseline, indicating lower family functioning (47.9% in the peer services group versus 43.3% in the no peer services group). At follow-up, just over half of individuals in the peer services group were rated in the strength category (57.9%). This number was slightly higher for the group that did not receive peer services, at 61.6%; however, it was also true that a higher percentage of individuals from the no peer services group moved from a strength to a need on this item at follow-up (11.1%) than did from the peer services group (8.4%), indicating decreased family functioning.

From the total sample, 44.1% of individuals were ranked a 2 or 3, indicating moderate to severe disruption, on the item related to social functioning. Altogether, 13.2% of individuals moved from a need to a strength at follow-up, indicating improvement; however, 30.9% of the total sample remained in the need category after six months. Individuals in the peer services group were more likely to be rated in the need category at baseline (47.3%), compared to the no peer services group (41.9%). A higher percentage from the peer services group also moved from the need to the strength category from baseline to follow-up (14.7%) compared to the no peer services group (12.1%), indicating improvement.

Less than one-third of the total sample was ranked a 2 or 3 on recreational activities, indicating a need, at baseline (29.4%). However, the percentage of need at baseline among the peer services group was much higher (over one-third, 36.3%) than the percentage among the no peer services group (around one-quarter, 24.9%). Overall, 11.5% of the total sample moved from a need to a strength, indicating improvement in this area. This percentage was approximately the same between the two groups (11.4-11.6%). While a smaller percentage of individuals from the peer services group moved from a strength to a need (7.4%) compared to the no peer services group (10.7%), indicating more impairment, it was also true that a greater percentage of individuals from the peer services group remained in the category of need (24.7%) than in the no peer services group (13.5%).

From the overall sample, most individuals were rated in the strength category for living skills (81.4%) at baseline. However, this percentage was much lower in the peer services group (73.6%), indicating more need, compared to the no peer services group (86.5%). Individuals in the peer services group moved from a need to a strength at a greater percentage (10.5%), indicating improvement, than individuals from the no peer services group did (6.2%). However, after six months, 14.6% of the no peer services group and 22.6% of the no peer services group fell into the need category related to living skills. This suggests that there may be room for improvement for assisting individuals to improve their daily living skills through the provision of peer services.

The greatest rate of positive change occurred in the area of residential stability. This item was most associated with need at baseline; 68.7% of individuals in the total sample were rated a 2 or 3 on residential instability. The rating of need was higher in the peer services group at baseline (76.4%) and at follow-up (59.0%) than it was in the no peer services group at both time points (63.7% at baseline and 52.3%). This item was also the most associated with growth. After six months, one-fifth of the total sample (20.0%) moved from the need category to the strength category. However, at follow-up, most individuals in the peer services group (59.0%) and the no peer services group (52.3%) still remained in the category of need.

Most individuals from the total sample were rated in the strength category at baseline for the item on self-care (80.3%). Additionally, 8.8% of all individuals moved from the need category into the strength category, indicating improvement in self-care from baseline to follow up. However, individuals from the peer services group were rated in the need category at a higher percentage (26.3%) at baseline than the no peer services group (15.3%). The

percentage of individuals who moved from a need to a strength on this item from baseline to follow-up was nearly twice as high for the peer services group (12.1%) as the no peer services group (6.6%), indicating improvement.

Finally, over three-quarters of individuals from the total sample were ranked in the strength category for involvement in their own recovery (84.7%). An almost equal number moved from need to strength (7.5%), from need to need (7.7%), and from strength to need (7.9%), from baseline to follow-up on this item. A lower percentage of individuals from the peer services group (79.5%) were rated in the strength category at baseline, relative to the no peer services group (88.3%). At follow up, the two groups had approximately the same percentage of individuals moving from a need to a strength, indicating improvement (7.4-7.6%), as well as moving from a strength to a need, indicating less involvement in recovery (7.9-8.0%). This meant many individuals in the peer services group remained in the category of need at follow-up (13.2%), especially compared to the no peer services group (4.2%).

For many items on the life functioning domain the group that received peer services was rated a 2 or 3, in the need category, more frequently than for the no peer services group at baseline. For five of the seven items (social functioning, recreational, living skills, residential stability, and self-care), the percentage of individuals that moved from a need to a strength, indicating improvement, was higher in the peer services group than in the no peer services group. Additionally, a lower percentage of people from the peer services group moved from a strength to a need, indicating worsening life functioning, on six of the seven items (all but family functioning). This was most pronounced on the item related to residential stability. However, the percentage that remained in the need category from baseline to follow-up for all seven items was higher for the group that received peer services. See Tables 10 and 11 for a description of the percent of individuals from each group (peer services and no peer services, respectively) that fell within each category of change (e.g. strengths → needs, or needs → remained, etc.) for life functioning domain items.

Table 10. ANSA life domain functioning item scores: Status change from baseline to 6-month follow up for peer services group (n = 190).

ANSA Item	**Strength → Need (%)**	**Need → Remained (%)**	**Strength → Remained (%)**	**Need → Strength (%)**
Item: Family Functioning	8.4	33.7	43.7	14.2
Item: Social Functioning	6.8	32.6	45.8	14.7
Item: Recreational	7.4	24.7	56.3	11.6
Item: Living Skill	6.8	15.8	66.8	10.5
Item: Residential Stability	3.7	55.3	20.0	21.1
Item: Self-Care	5.3	14.2	68.4	12.1
Item: Involvement in Recovery	7.9	13.2	71.6	7.4

Table 11. ANSA life domain functioning item scores: Status change from baseline to 6-month follow up for no peer services group (n = 289).

ANSA Item	Strength → Need (%)	Need → Remained (%)	Strength → Remained (%)	Need → Strength (%)
Item: Family Functioning	11.1	27.3	45.7	15.9
Item: Social Functioning	6.9	29.8	51.2	12.1
Item: Recreational	10.7	13.5	64.4	11.4
Item: Living Skill	7.3	7.3	79.2	6.2
Item: Residential Stability	8.0	44.3	28.4	19.4
Item: Self-Care	6.2	8.7	78.5	6.6
Item: Involvement in Recovery	8.0	4.2	80.3	7.6

Strengths

Eleven items from the strengths domain were included in computing the domain average scores; the majority of the sample was missing data on the item related to educational skills at one or both time points. Domain score ranged from 0-30, with lower scores indicating better strengths. Overall score change on the strengths domain was small, but indicated improvement. In the entire sample, average score dropped from 20.11 (*SD* = 5.46) at baseline to 19.53 (*SD* = 5.51) at follow up. The group that received peer services had a greater change in score from baseline to follow up, from an average of 20.33 (*SD* = 5.29) to 19.52 (*SD* = 5.25), relative to the group that did not receive peer services (*M* = 19.96, *SD* = 5.57 at baseline to *M* = 19.53, *SD* = 5.67 at six month follow up). For the peer services group, the difference in score from baseline to follow up was statistically significant, $t(189) = 2.15$, $p < .05$. See Table 5 for a description of all domain score changes, including the strengths domain, for both groups (peer services and no peer services) from baseline to follow-up. From the strengths domain, four items were examined to determine the percent of individuals in each group that moved from or stayed within each category: social connectedness, community connection, natural supports, and resiliency.

At baseline, the majority of the overall sample (74.1%) was rated a 2 or 3 on social connectedness, indicating less interpersonal strengths. This percentage was slightly higher in the group that received peer services (75.8%) compared to the group that did not (73.0%). Approximately the same percentage of individuals from each group moved from a need to a strength, indicating improvement, from baseline to follow up (8.9% in the peer services group and 9.3% in the no peer services group). Individuals from the peer services group were slightly more likely to remain in the category of need from baseline to follow-up (66.8%) compared to the no peer services group (63.7%).

Ratings for the item on community connections for the overall sample also indicated low levels of engagement at baseline, with 73.5% of the sample rated a 2 or 3 on their initial assessment. Overall, 62.4% of individuals from the total sample remained in the category of need from baseline to follow-up. However, this was slightly lower in the group that received peer services (61.6%) compared to the group that did not receive peer services (63.0%). The

same percentage of individuals from both groups moved from a need to a strength from baseline to follow-up, indicating improvement (11.1%). And a lower percentage from the peer services group moved from a strength to a need (7.4%) compared to the no peer services group (9.3%), indicating a decrease in community connection.

For the item on natural supports, most of the overall sample was rated in the needs category (68.9%), though this was less than the items on social and community connection. This was higher in the group that received peer services (73.2%) than in the group that did not (66.1%). A greater percentage of individuals from the peer services group moved from a need to a strength on this item (15.3%), indicating improvement, than did in the no peer services group (13.5%). However, over half of the peer services group remained in the category of need at follow up (57.9%). This might indicate an opportunity peer services to identify and promote natural supports of individuals that are enrolled in the program.

The strength item that was rated as most robust for both groups at baseline was resiliency. Over half of the total sample were rated in the strength category at baseline for this item (57.8%). This was also the item that saw the most improvement. Overall, 17.1% of the total sample progressed from a need to a strength in this area, indicating improvement. This was higher among the group that received peer services (18.4%) relative to the group that did not receive peer services (16.3%). While the peer group also had a lower percentage remaining in the category of need (23.2% compared to 26.3% in the no peer services group) from baseline to follow-up, it was also the case that a greater percentage of individuals from the peer services group moved from the strength category to the need category on this item (12.6% compared to 10.7%), indicating reduced resiliency.

Overall, ratings for individuals in the total sample on strengths items indicated low interpersonal, community, and natural supports and connections at baseline, but relatively high levels of resiliency. The majority of individuals from both groups remained in the category of need from baseline to follow up on three of the four items. See Tables 12 and 13 for a description of the percent of individuals from each group (peer services and no peer services, respectively) that fell within each category of change (e.g. strengths → needs, or needs → remained, etc.) for strengths items.

Table 12. ANSA strengths item scores: Status change from baseline to 6-month follow up for peer services group (n = 190).

ANSA Item	Strength → Need (%)	Need → Remained (%)	Strength → Remained (%)	Need → Strength (%)
Item: Social Connectedness	8.4	66.8	15.8	8.9
Item: Community Connection	7.4	61.6	20.0	11.1
Item: Natural Supports	18.4	57.9	18.4	15.3
Item: Resiliency	12.6	23.2	45.8	18.4

Table 13. ANSA strengths item scores: Status change from baseline to 6-month follow up for no peer services group (n = 289).

ANSA Item	Strength → Need (%)	Need → Remained (%)	Strength → Remained (%)	Need → Strength (%)
Item: Social Connectedness	8.0	63.7	19.0	9.3
Item: Community Connection	9.3	63.0	16.6	11.1
Item: Natural Supports	8.0	52.6	26.0	13.5
Item: Resiliency	10.7	26.3	46.7	16.3

Psychiatric Hospitalizations and Crisis History

From the psychiatric hospitalizations and crisis episodes domains, two items were examined to determine the percent of individuals in each group that moved from or stayed within each category: psychiatric hospitalizations in the past 180 days and crisis episodes in the past 90 days. For the item on psychiatric hospitalizations, a rating of 0 was assigned if the person experienced 0 psychiatric hospitalizations in the past 180 days, and a rating of "1" for 1 hospitalization, "2" for 2 hospitalizations, and "3" for 3 or more hospitalizations was assigned, respectively. For the item on crisis episodes, a rating of 0 was assigned if the person experienced 0 crisis episodes in the past 90 days, a rating of "1" for 1 episode, "2" for 2 episodes, and "3" for 3 or more episodes was assigned, respectively. Score change from baseline to follow-up was small, but in a direction that indicated improvement. For the overall sample, average score on the two-item domain decreased from 0.71 (SD = 1.17) to 0.62 (SD = 1.23) on a scale from 0-6, with 6 indicating a greater number of hospitalizations and crises. See Table 5 for a description of all domain score changes, including the combined psychiatric hospitalization and crisis history domains, for both groups (peer services and no peer services) from baseline to follow-up.

At baseline, the peer services group had an average hospitalization and crisis score nearly twice as high as that of the no peer services group (peer services M = 0.99, SD = 0.79, no peer services M = 0.52, SD = 0.98). The peer services group also demonstrated a much bigger decrease in score (-0.20) relative to the no peer services group (-0.01) from baseline to follow-up. The difference in score between the two time points for the peer services group was statistically significant, $t(189) = 1.98$, $p < .05$.

From the overall group, most individuals started and ended in the strength category for both items (90.4% for hospitalizations and 86.4% for the crisis episodes). However, individuals from the no peer services group were more likely to start in the strength category for both items (96.2% for hospitalizations and 94.1% for crisis episodes) compared to the peer services group (89.0% for hospitalizations and 87.9% for crisis episodes). Approximately the same percentage of individuals from both groups changed from the strength to need category for the item on psychiatric hospitalizations, indicating a greater number of hospitalization (3.2% for peer services group and 2.8% for no peer services group). A greater percentage of individuals from the peer services group moved from the strength to the need category on the item related to crisis episodes (6.3%) compared to the no peer services group (4.5%). However, for both items, a greater percentage of individuals from the peer services group moved from a need to a strength (5.8% for hospitalizations and 7.4% for crisis episodes), indicating improvement, compared to the no peer services group (2.4% and 4.5%, respectively). See Tables 14 and 15 for a description of the percent of individuals from each group (peer services and no peer services, respectively) that

fell within each category of change (e.g. strengths → needs, or needs → remained, etc.) for psychiatric hospitalizations and crisis history items.

Table 14. ANSA psychiatric hospitalization and crisis history item scores: Status change from baseline to 6-month follow up for peer services group (n = 190).

ANSA Item	Strength → Need (%)	Need → Remained (%)	Strength → Remained (%)	Need → Strength (%)
Item: Psychiatric Hospitalizations (180 days)	3.2	5.3	85.8	5.8
Item: Crisis Episodes (past 90 days)	6.3	4.7	81.6	7.4

Table 15. ANSA psychiatric hospitalization and crisis history item scores: Status change from baseline to 6-month follow up for no peer services group (n = 289).

ANSA Item	Strength → Need (%)	Need → Remained (%)	Strength → Remained (%)	Need → Strength (%)
Item: Psychiatric Hospitalizations (180 days)	2.8	1.4	93.4	2.4
Item: Crisis Episodes (90 days)	4.5	1.4	89.6	4.5

Discussion

The current evaluation sought to measure the outcomes of individuals who received peer services through the HCC project at Integral Care. Specifically, we examined baseline and six month follow-up ratings on ANSA domains and items, overall, and between one group of individuals that did receive peer services and one that did not.

For most domains and items, the group of individuals who received peer services started off with higher average scores at baseline, indicating more needs and fewer/less-developed strengths, relative to the group that did not receive peer services. The peer services group had a higher average score on the behavioral health needs domain, life functioning domain, and strengths domain at baseline. Additionally, the average score on the psychiatric and crisis episodes domain was nearly twice as high at baseline for the peer services group relative to the group that did not receive peer services.

At follow-up, the group that received peer services had a statistically significant reductions in average score on four of the five domains measured, indicating improvement. The group that did not receive peer services had a statistically significant reduction in average score on one of the five domains in a direction that indicated improvement (behavioral health needs). However, they also had a statistically significant *increase* in score on the risk behaviors domain, though the increase in score was small. This indicates that the group that received peer services had greater improvements in five life domains, compared to the group that did not receive peer services. This may be partially due to the fact that the group that received peer services started with less-developed

strengths and higher needs at baseline. However, it is still a notable finding that supports the existing literature on the many benefits of receiving peer services.

Both peer services and no peer services groups had an increase in score on the risk behaviors domain, indicating higher risk at follow up. For the group that received peer services, this increase was not statistically significant (it was a smaller and less reliable increase than in the group that did not receive peer services). The risk behaviors domain was comprised of three items: suicide risk, self-injurious behavior, and criminal activity. There was little difference between the groups on the item related to criminal activity, and no one from either group was deemed at risk of suicide at either time point. However, self-injurious behavior ratings did increase from baseline to follow up for both groups. The increase was much higher in the peer services group compared to the group that did not receive peer services. It may have been that individuals in the peer services group were more likely to *disclose* self-injurious behavior at follow-up, and not that they were more often engaged in it. Part of the role of peer support is to practice positive self-disclosure (Davidson, Bellamy, Guy, & Miller, 2012). It is reasonable to think that an individual who receives services from a peer might be more likely to discuss self-injurious behavior after engaging in services where positive self-disclosure occurs, relative to someone who has not received those services.

On the behavioral health domain, the percent of individuals in the peer services group that moved from a need to a strength, indicating improvement, was high for items related to substance use and impulse control. Not receiving peer services was associated with more modest improvements in these areas. On the life functioning domain, more than 10.0% of the peer services group had improvement on six of the seven items examined. The group that did not receive peer services had lower percentage improvement for five of those six items. On the strengths domain, almost one-fifth of the peer services group showed improvement on the resiliency item, which was higher than for the group that did not receive peer services.

Overall, the peer support group had a greater rate of improvement, from a strength to a need, relative to the group that did not receive peer services on many items and domains. This may partially have been due to the fact that individuals from the peer services group were more often rated in the need category at baseline. This finding indicates that at Integral Care, individuals who have higher needs and less developed strengths may be more likely to receive peer services. Findings from this report also show domains where improvements can still be made, where it might be beneficial to concentrate future efforts. Item where a high percentage of individuals remained in the need category from baseline to follow up for the peer group included adjustment to trauma (17.9%), involvement in recovery (13.2%), and social connectedness (66.8%). Research has indicated that peer services can have a positive effect in these areas, so it may be beneficial to consider these areas of concern for individuals during the course of providing peer services.

Limitations

One limitation to the study was that the measure of peer services was dichotomous (e.g., measured on a yes or no basis) rather than continuous (e.g., each peer service is counted). Additionally, assignment to the two groups was not random, therefore a causal relationship between receiving peer services and improvements on the indicated domains and items cannot be established. Finally, indicated improvements were small, but in a direction that showed progress for most areas studied. Future research should examine the mechanism by which these improvements were made, to determine if there is a way to more accurately capture differences before and after receiving peer services. Additionally, research that examines the effect of peer services over a longer time period (1-year or more) might provide additional insights.

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