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Access to Integrated Care: The Case of Substance Abuse Patients with Chronic Disease

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Abstract

This study applies chronic care model to reviewed patients' chart augmented with focus group interviews to determine the percentage of SA patients with chronic diseases that get access to treatment at a North Carolina SA treatment facility. Among the 62 charts reviewed and 9 focus group interviews, all patients, at least had a major chronic disease which include hepatitis C, hypertension, pain, obesity, arthritis, and diabetes; and as much as (92.3%) do not get treatment in that facility but are referred out. Also, major access barriers include financial cost, lack of insurance, lack of transportation, long wait times, and stigma were documented. The results of the study highlight the need for comprehensive integrated care as well as community support for Substance abuse patients.

Keywords: Substance Abuse; Mental Health, Substance Abuse; Chronic Diseases; Access to Treatment and Barriers

Abbreviations: MH: Mental Health; SA: Substance Abuse; CCM: Chronic Care Model; WSSU: Winston Salem State University; BMI: Body Mass Index; BP: Blood Pressure: SPSS: Statistical Package for the Social Science.

Introduction and Background

Population and individual health are significantly influenced by social determinants that range from individuals' knowledge and behaviors to community-level characteristics, resources, and conditions. The expertise and infrastructure to address these multiple and diverse challenges are divided among systems that often fail to work collaboratively because of misalignment between their respective delivery of services, strategy, and financing [1]. Addressing the social determinants of health is vital to improving individual and population health and advancing health equity Research indicates that integrating health and social services is both necessary and cost-effective. This is especially true for the growing number of older adults who face increasing risk of multiple chronic health conditions, cognitive decline, and disability. The Community Care Connections program developed by Lifespan of Greater Rochester integrates care navigators and health care coordinators into the workflow and referral systems in health care delivery settings. These coordinators connect patients to resources, guide them across healthcare settings, and serve as their patient care advocates [2].

The published literature clearly points out that although many individuals with substance abuse disorders do not have access to primary care providers, even when such access is available, many patients still do not receive the care needed for prevention and chronic disease treatment

and management. A number of studies have addressed some possible reasons. Among these are difficulty getting appointments, long wait time for an appointment and, once a patient is at the health care facility, long wait times before being seen by providers [3-5].

Other barriers include a lack of transportation and long travel distance to the nearest primary care clinic [6-8]. Inadequate health insurance, high deductible and co pays and, as a result, large medical bills [9,10]. Stigma is another barrier to care [11-13]. Socioeconomic status and ineffective communication can also act as barriers to using primary care [9,14]. Additionally, some patients may lack of knowledge of available primary care services and how to locate them and make appointments.

For instance, populations with diabetes can successfully manage their condition if they have regular access to primary care along with access to quality food, physical, and social environments that support healthy lifestyles. Lack of safe, convenient, and affordable transportation options can make it difficult for low-income populations to access these resources [15].

The term integrated care is used to describe an approach to care in which patients may obtain both medical care and mental health (MH) care at a single health facility. Care integration improves accessibility to health care services and does so with the goal of achieving early detection of health conditions and/or promoting the effective management of chronic health conditions. There is a growing body of literature on integrating MH care into primary care services, but there are few studies focused on the integration of primary care into substance-abuse (SA) treatment centers. While integrating SA or MH care into primary care has been described extensively, its opposite that is integrating primary care into SA and MH care is a relatively new concept, and its effectiveness has not been well studied [5,16]. According to Alakeson, Frank and Katz each year MH facilities serve over 3.5 million patients with MH and substance use disorders. Providing integrated care in MH or SA facilities has the potential to improve accessibility to primary care services for a large number of patients who might otherwise not receive such services, despite their being vulnerable. Moreover, an integrated-care format has the potential to increase the delivery of preventive, early detection, and treatment services for chronic medical diseases. All of these efforts can decrease the prevalence of chronic medical diseases and promote effective disease management, ultimately improving the health status of millions of people. Therefore, integrating primary care into MH and SA abuse treatment facilities can serve as a comprehensive, cost-effective and medically effective method of care delivery for clients with substance abuse disorders [17].

There is clear evidence that chronic medical diseases are more prevalent among individuals who suffer from a SA disorder than those with no SA disorder [18-20]. For example, a number of studies have found that the prevalence of diabetes, hypertension, and hepatitis C among persons with SA disorders is higher than in the general population [21]. Additionally, several studies have found that patients with diabetes plus a history of SA have more hospitalizations, compared with those who do not have a substance-abuse history [22]. This may, in part, be related to the fact that these individuals may be less likely to adhere to diabetes treatment, as compared with those who have no substance use history [19,23].

SA patients are nine times more likely to develop congestive heart failure and 12 times more likely to develop cirrhosis [24]. Moreover, patients with narcotic addiction have 12 times higher risk of developing pneumonia than do persons in the general population [25]. Patients who are injection-drug users are approximately 10 times more likely to become HIV positive and those who use crack cocaine are twice as likely to become HIV positive, compared with non-drug users [26]. Chronic medical diseases co-existing with SA can lead to impaired physical functioning and decreased quality of life [18]. Evidence suggests that individuals with MH and SA disorders tend to die seven to 24 years earlier than the general population [27]. Studies have demonstrated, however, that managing chronic medical diseases may improve treatment outcomes and enhance physical functioning and quality of life [28]. Yet, despite the fact that substance abusers have a high prevalence of chronic medical conditions, many substance abuse treatment centers do not address these conditions [28,29].

In summary, few current studies in the published literature address the integration of physical and mental health care. Based on the published literature on integrating primary care with behavioral health and/or SA treatment, there are clear benefits to be obtained through such integration. Most of the studies that have been conducted in this area suggest that patients are more likely to receive preventive health care and that chronic health conditions are better managed with an integrative health care model. Yet, the studies have also identified barriers to integrated care. One such barrier is geography. The literature suggests that the prevalence of integrated care may be higher in urban areas.

However, this finding may actually be a function of the type of community studied, in other words, whether the community might be categorized as being rural, urban, or frontier, whether the practice was of one or another size, and whether providers were in a reasonable proximity to the locations. Reimbursement rates and billing restrictions are additional barriers. Understanding the barriers that interfere

with patients' ability to receive medical care is necessary if successful intervention models are to be designed.

This study applies chronic care model (CCM) to reviewed patients' chart augmented with focus group interviews to determine the percentage of SA patients with chronic diseases that get access to treatment at a North Carolina SA treatment facility as well as documenting the major access barriers.

The rest of the paper organized into five sections. Section 2 is a brief reviewed literature on access to integrated care and CCM. Section 3 presents the theoretical framework of the CCM. Section 4 describes the methodology, design, procedures, data and analysis. Results of the analysis and its discussions are presented in Section 5 while Section 6 presents the summary and conclusion.

Reviewed Literature

Pagán and Fisher [2], evaluated the Community Care Connections program developed by Lifespan of Greater Rochester integrates care navigators and health care coordinators into the workflow and referral systems in health care delivery settings. They concluded that addressing the social determinants of health is vital to improving individual and population health and advancing health equity. Research indicates that integrating health and social services is both necessary and cost-effective. This is especially true for the growing number of older adults who face increasing risk of multiple chronic health conditions, cognitive decline, and disability.

Li et al. proposes a randomized trial to test several low-cost ways of improving transportation opportunities for low-income urban diabetic patients, including providing public transit vouchers, ride-share credits on Lyft, a cash benefit, or mobility counseling compared with usual medical care alone. The team will estimate the impact of these mobility enhancements on access to care, diabetes progression, healthcare utilization and costs. The research team will collaborate with Grady Health System, the Metropolitan Atlanta Rapid Transit Authority, the Atlanta Regional Commission, and the Atlanta Regional Collaborative for Health Improvement to conduct the study.

Using Participatory Action Research methodologies, Halverson and Vest, 2016, investigated and identified gaps in how multisector services, delivery systems, and financing streams are currently aligned; estimating and identifying redundancies, gaps, and bottle-necks in the current health system to understand the fragmented and siloed structure of health care for persons with behavioral health disorders; and triangulating multisector evidence regarding alignment of financing and delivery systems.

Nguyen H investigated how lack of transportation affects healthcare access among the most vulnerable individuals. Ross, et al. [30] used community-based participatory action to examine the cause of poor access to primary care among mental health and substance abuse patients with chronic medical diseases.

Ronksley identified potentially modifiable barriers to primary care. The authors conducted a survey in four western provinces in Canada, a survey that examined barriers to the receipt of primary care services among adults 40 and older. The sample (n= 1,849) surveyed patients with hypertension, diabetes, heart disease and stroke. The authors found that many of the respondents with chronic conditions requiring primary care from physicians in the previous year had no problem getting care; while approximately10% reported a barrier. The most frequent barriers were reported by respondents with diabetes (16%). Their primary barrier was long wait times for getting appointments and receiving care. In a similar study, Ross et al. explored why SA/ MH patients had poor primary care access. The authors used 85 SA/MH patients and 17 service providers from other disciplines who work with this population group. They found that the barriers were related to factors involving clients, service providers, and the health system.

Theoretical Framework

The paper employs the Chronic Care model (CCM), developed by Wagner, Austin and von Korf [31]. The CCM is a multifaceted framework for enhancing health care delivery. The model, based on a paradigm shift from the current framework of dealing with acute care issues to a prevention-based system, was developed to improve primary care for people with chronic health conditions. Davy, et al. [32], reviewed the effectiveness of CCM for improving health care practice and healthcare outcome. Yeboah and Campbell [33], applied CCM to determine SA and integrated care. Woltmann, et al. [34] reviewed the effectiveness chronic care models used in mental health, primary, and specialty, care settings. The premise of the model is that quality health care occurs at community and health systems levels. Community resources refer to those services in the community, including the family and neighborhood, available to patients to help manage chronic medical diseases.

Health care organizations include all those functioning in all clinical settings. Quality health care, as promoted by the CCM, can be enhanced by four elements, and these have been incorporated into the model. These elements are:

- Self-management support
- Delivery system design

- Decision support and
- Clinical information systems

Self-management support involves education to empower and prepare patients to manage their health. Delivery system redesign involves planning and organizing the roles of the provider team to ensure effective, efficient care and self-management support. Decision support is designed to support care based on evidence-based treatment algorithms and provider education strategies. Clinical information systems, such as the electronic health record (EHR), organize patient and population data to facilitate effective care. Notably, these four elements are interrelated, providing support to one another to enhance patient-provider interactions.

SA patients with chronic medical diseases conditions need safe, high quality primary care to manage their physical conditions. The CCM framework offers a guide to SA treatment facilities in their efforts to integrate primary care into treatment goals and interventions. Efforts to provide a delivery system and self-management support for patients being treated in a SA facility may enhance health outcomes. Integrated health care, including shared clinical information systems, offer a viable option. The CCM model supports the use of health care, evidence-based practice, self-management support and electronic data base to improve the health of substance abuse patients. The four elements of the model are essential for effective integration of care.

Methods and Procedures

The paper employs a retrospective cross-sectional descriptive design. The charts review documented the presence and management of chronic medical diseases among SA patients at a SA treatment facility. Data for the study were retrieved through a chart review from the period January 2014 through December 2014. In addition, a single focus group session was held to assess barriers to primary care services by patients in the treatment facility. The charts review and focus group interviews were all conducted at a SA treatment facility in the Southeastern United States. The chart review comprised a sample of 62 patients with chronic medical conditions who were receiving SA treatment at a local SA Treatment Center. A chart was selected if there were documented chronic medical disease history. Those without a documented chronic medical disease were excluded from the analysis. The focus group interviews were conducted on nine patients who were being treated at the Center. They included the following: seven white females; one African American female; and White male; with mean age of 36.11 years and range of 24-50 years. In addition to a history of chronic medical conditions, patients were selected to participate only if they were able to understand and speak English.

Approval to conduct the study was obtained from the SA treatment facility and the Institutional Review Board at Winston-Salem State University (WSSU). Informed consent forms were distributed and signed by participants. All prospective participants of the focus group interviews were notified of the study at various groups therapy sessions held at the treatment facility and through posted flyers. Participants were recruited to participate by invitation from the author. Permission to participate in the focus group was provided by participants. Interviews were conducted by the authors while an employee from the SA treatment facility took notes. Participants were told to answer questions at their comfort level. To minimize the risk that confidential information might be released, the anonymity of participants was maintained. A semi-structured interview questionnaire which was administered to identify patient's perception of barriers to primary care services for chronic medical disease management lasted for about 30 minutes. Participants were asked to respond to questions such as: Has a usual place for health care? Doctor visit in the past 12 months? Emergency room visit in past 12 months. The questionnaire was adapted from Kirzinger, Cohen and Gindi [35] format. The authors used this tool to examined health access and utilization. At the beginning of the interview, the authors explained the objective of the focus group session as well as the ground rules. Participants introduced themselves.

A thematic-content-analysis method was used to identify, analyze, and report patterns within the transcribed data [36,37]. This process was developed to determine and extract major themes. The interviews were audio-recorded and transcribed word for word and were checked by the author. Some of the major themes that emerged out of the discussions were cost, lack of insurance, long wait times, problems surrounding transportation, and issues of stigma. Once the themes were determined, the marked text was coded, using predetermined themes as described by Vaismoradi, Turunen and Bondas [38].

The chart reviews were also conducted by the authors using a data extraction tool originally used by Barber, et al. [39]. The extraction tool was modified for this study so that it would cover chronic medical diseases. A test of inter-rater reliability was performed on the revised questions by randomly selecting 10 charts and using the extraction tool to extract data from those charts. Reassessment of the tool was done five weeks after the initial assessment, with the kappa value for test-retest being 0.86. The data extracted included information such areas as socio-demographics; chronic medical diseases; medical data; and provider intervention. The socio-demographic data extracted included age, gender, and ethnicity, marital status, level of education, health coverage, and employment history.

Medical data included height, weight, body mass index (BMI), waist circumference, and systolic and diastolic blood pressure (BP). The chronic medical diseases included are diabetes, hypertension, obesity, herpes, pain, COPD, thyroid, hepatitis A, hepatitis B, hepatitis C, asthma, cholesterol, MRSA, cirrhosis, neuropathy, arthritis, GERD, cancer, seizure, stomach problems, heart problems, migraine, stroke, scoliosis, cystic fibrosis, and pancreatitis. Provider interventions listed on the charts included on the data extraction tool included education level, diet, physical activity level, medications, referral history, and other interventions.

Descriptive statistics (mean, standard deviation, frequency and percentage) were performed on the demographic, personal health and other study variables; and also, to addressing the two research questions using Statistical Package for the Social Science (SPSS). A nonparametric McNemar-Bowker test was employed to determine the number of chronic medical diseases an individual patient suffered from related to provider interventions instituted. Statistical significance level was set at $p < 0.05\%$; while Content analysis was used in addressing the barriers to primary care [40].

Results and Discussions

Table 1 presents the social and demographic characteristics of the participants while "Table 2 illustrates health characteristics. Overall, the mean age of study participants was 41.74 years (SD=11.89). Mean BMI was 31.49 (SD=9.02). Mean waist circumference was 37.4 (SD = 68). Mean SBP was 129.76 (SD 22.78), while mean BP was 80.82 (SD =7.4; "Table 2"). Table 3 presents female personal health characteristics. The mean age was 42.76 years (SD = 12.43); mean BMI was 32.45 (SD = 9.65); mean waist circumference, 36.53 (7.38); mean SBP, 124.62 (SD = 22.27); mean BP, 78.88 (SD = 11.65. Characteristics of male participants are presented in Table 4. The mean age was 40.5 (11.29); mean BMI was 30.33 (SD = 8.2); mean waist circumference, 38.46 (7.41); mean SBP, 136 (SD = 22.19); mean DBP, 83.28 (SD = 11.21).

Study characteristics	n(62)	%
Marital Status		
Single	28	45.2
Married	19	30.6
Divorced	13	21
Widow/Widower	2	3.2
Highest Education Level		
High school Completed	56	90.3
2 yrs. college completed	6	9.7
4 yrs. college completed	—	—
BA/BS degree obtained	—	—
MS/MN/MA degree obtained	—	—
Employment Status		
Full time	13	21
Part time	11	17.7
Unemployed	23	37.1
Retired/disabled	15	24.2
Sex		
Female	34	54.8
Male	28	45.2
Source of Payment		
Private	—	—
Medicaid	19	30.6
Medicare	—	—
Out of pocket	—	—

Other (IPRS)	43	69.4
Race/Ethnicity		
White	55	88.7
Black	7	11.3
Hispanic	—	—
Asian	—	—
Who made referral to clinic		
Primary Care Doctor	1	1.6
Emergency Department	—	—
Local Mental Department	8	12.9
Detox Program	—	—
Nurse Practitioner	—	—
Self-referred	34	54.8
Hospital inpatient unit	9	14.5
DSS/Court	2	3.2
Other	8	12.9

Table 1: Social and Demographic Characteristics of Participants.

Study characteristics	n	M	SD	Min.	Max.
Age	62	41.74	11.89	21	68
BMI	62	31.49	9.02	18.17	66.63
Waist circumference	62	37.4	7.4	27	61
Systolic blood pressure	62	129.76	22.78	93	190
Diastolic blood pressure	62	80.82	11.56	61	110

Table 2: Personal Health Characteristics of Study Participants.

Study characteristics	n	M	SD	Min.	Max.
Age	34	42.76	12.43	26	68
BMI	34	32.45	9.65	21.09	66.63
Waist circumference	34	36.53	7.38	28	54
Systolic blood pressure	34	124.62	22.27	93	190
Diastolic blood pressure	34	78.88	11.65	61	108

Table 3: Female Personal Health Characteristics

Study characteristics	n	M	SD	Min.	Max.
Age	28	40.5	11.29	21	64
BMI	28	30.33	8.2	18.17	60.8
Waist circumference	28	38.46	7.41	27	61
Systolic blood pressure	28	136	22.19	98	190
Diastolic blood pressure	28	83.28	11.21	61	110

Table 4: Male Personal Health Characteristics.

Table 5 presents the results of medical diseases and provider interventions. A total of 26 chronic conditions were identified from chart reviews, with another total of 25 chronic medical diseases reported among those seeking services at the mental health clinic. All of the patients had a history of chronic medical diseases: hepatitis C (41.9%, n = 26), hypertension (32.3%, n = 20), pain (24.2%, n = 15), a history of obesity (19.4%, n = 12), arthritis (17.7%, n = 11), diabetes (16.1%, n = 10), and GERD (14.5%, n = 9). The most common provider interventions among this group of patients were referral (92.3%), education (23.1%), and diet (15. 4%).

Chronic conditions	Provider interventions							
	n	%	Edu.	Diet	Phy. Act	Med.	Ref.	None
Diabetes	10	16.1	10	10	—	—	10	—
Hypertension	20	32.3	20	20	—	—	20	—
Obesity	12	19.4	12	12	—	—	12	—
Herpes	3	4.8	—	—	—	—	3	—
Pain	15	24.2	—	—	—	—	15	—
COPD	7	11.3	—	—	—	—	7	—
Thyroid	8	12.9	—	—	—	—	8	—
Hepatitis A	1	1.6	1	—	—	—	—	—
Hepatitis B	—	—	—	—	—	—	—	—
Hepatitis C	26	41.9	—	—	—	—	26	—
Asthma	4	6.5	—	—	—	—	4	—
Cholesterol	3	4.8	3	1	—	—	3	—
MRSA	7	11.3	—	—	—	—	7	—
Cirrhosis	6	9.7	—	—	—	—	6	—
Neuropathy	3	4.8	—	—	—	—	3	—
Arthritis	11	17.7	—	—	—	—	11	—
GERD	9	14.5	—	—	—	—	9	—
Cancer	5	8.1	—	—	—	—	5	—
Seizure	3	4.8	—	—	—	—	3	—
Stomach problem	2	3.2	—	—	—	—	2	—
Heart Problem	7	11.3	5	—	—	—	7	—
Migraine	6	9.7	—	—	—	—	6	—
Stroke	2	3.2	—	—	—	—	2	—
Scoliosis	2	3.2	—	—	—	—	2	—
Cystic fibrosis	2	3.2	—	—	—	—	2	—
Pancreatitis	1	1.6	—	—	—	—	1	—

Note. *Edu. = Education, Phy. Act. = Physical Activity, Med. = Medication, Ref. = Referral, OInt. = Intervention.
Table 5: Chronic Conditions and Provider Interventions.

The chronic medical diseases for which a referral was made most frequently were hepatitis C (41.9 %), hypertension (32.3%), pain (24.2 %), obesity (19.4%), arthritis (17.7 %), and diabetes (16.1%). Association between chronic medical disease and provider intervention is presented in table 6. The interventions conducted or recommended by providers differed in relation to whether a patient had only a few or more than a few chronic medical diseases. Providers were more likely to favor education (53.2%) for all patients but at a higher rate for those with 2 to 3 (40.3%) chronic medical diseases (McNemar-Bowker test = 22.62, df = 3, p = 0.0001 (Table 6).

Number of interventions					
		Education	Diet	Referral	Total
Chronic Conditions	One	12.2	0.7	10	37.1%
	Two-Three	13.3	0.8	10.9	40.3%
	≥ Four	7.5	0.5	6.1	22.6%
Total		53.2%	3.2%	43.5%	

McNemar-Bowker Test = 22.62, df. = 3, p = 0.0001.
Table 6: Provider Initiated Interventions for Chronic Diseases by Number of Different Chronic Diseases.

Barriers to Access

Cost

About 67% of participants) indicated that they have delayed medical care because of lack of resources or inadequate insurance; accumulated medical bills; cost of lab tests and medications; expensive co-pay; are some of the cost attributes.

Long Wait Time

Long wait time was also identified as a barrier. All of the participants reported waiting excessively to be seen by a provider, some as long as five hours. According to one participant long wait for walk-in, free clinic can take a whole day. All the participants agreed that the community care clinics are especially slow.

Transportation

Transportation was reported as a barrier for all of the participants. Almost all of the participants mentioned lack of transportation as a barrier to seeking primary care services. Participants depend on family, friends, and public transportation, and often are not able to secure needed transportation. Lack of transportation was the cause of most cancellations of scheduled appointments and also interfered with patients getting their prescriptions filled. One participant commented, "I made an appointment at the Community Health Center a month

Stigma

Participants reported that seeking care in either the emergency department or in a primary care facility was difficult because of the stigma they frequently faced. They reported that whenever the list of current medication revealed that an individual was taking methadone, the assumption was that the person is seeking pain pills.

Usual Source of Care

The outcomes of the focus group interviews included seven out of the nine (78%) of the participants identified the emergency department as their usual source of care. These participants also reported each had visited the emergency department from four to six times within the past 12 months. Reasons for going to the emergency department ranged from anxiety and withdrawal symptoms to management of symptoms related to chronic medical conditions, such as diabetes. The findings from the charts reviewed also that a considerable number of patients enrolled in the SA treatment program have chronic medical diseases, many of which are not well managed. In fact, 37.1% of the patients in the study had at least one chronic condition; 40.3% had two or three chronic medical diseases; 22.6% had greater than four chronic medical diseases. Specific chronic conditions reported included hepatitis C, hypertension, pain, obesity, diabetes, arthritis, and gastroesophageal. Combined with the evidence in the published literature, the results of the study provide documentation for the administrators of the SA treatment facility of the need for chronic disease management among their population of patients. However, the SA patients having all these other chronic diseases and with all the listed access barriers, only under 8% of them do get treatment under the facility. As much as 92.3% are referred out.

Summary and Conclusion

In summary, the findings of this study demonstrated that patients are dealing with physical, psychosocial, chronic medical diseases, which present a common set of challenges to them. Unfortunately, as much as (92.3%) do not get treatment in that facility but are referred out. Moreover, for those who received care, it was not sufficient to address their health care needs. The care sought was often from emergency departments and all too often there was no follow up care from primary care providers. Many of them do not receive needed care because of perceived barriers. The results of the study highlight the need for integrated care for SA patients and the need to address the chronic medical diseases of patients in the treatment facility. It also highlights the need for setting up primary care services in the SA treatment facilities.

Establishing such services would permit patients to receive primary care services and, at the same time, overcome some of the barriers that make it difficult for patients to receive chronic disease management.

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