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Rapid Assessment of Nutrition Services in Los Angeles Substance Use Disorder Treatment Centers

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Abstract
The objective of this study was to determine the prevalence of nutrition services and utilization of registered dietitian nutritionists at substance use disorder treatment centers in Los Angeles. This cross-sectional descriptive study utilized phone interviews with facilities within a 25-mile radius of the Los Angeles metropolitan area using the Substance Abuse and Mental Health Services Administration Treatment Services Locator to identify facilities that included a listing of substance abuse as primary focus of care (n = 128). Facilities were asked if they offered any kind of nutrition services, the type of services that were offered, and the credential of the professional providing the services. We compared facilities that offered a residential level of care to those offering outpatient services only. The Fisher's exact test was used to determine statistical significance. The study showed that only 39 sites (30.5%) offered any type of nutrition services on site, and the odds of a residential level of care offering nutrition services was 2.7 times higher than outpatient only facilities ($p = 0.02$). Of the 39 facilities offering nutrition services, only 8 (20.5%) utilized a registered dietitian nutritionist. Overall fewer than 7% of the facilities utilized the services of a dietitian. Recovery programs for substance use disorder should consider using a registered dietitian nutritionist as a member of the treatment team, which may contribute to better clinical outcomes.

Keywords Alcohol use disorder · Opioid use disorder · Substance-related disorders · Nutrition · Treatment

Introduction

The opioid crisis has touched virtually every city in the U.S. and has been covered extensively in the media. Recent data suggest widespread use in adults and teens [1] with increasing rates of overdose and death [2]. Despite the explosion of substance use disorders (SUD), efforts to improve treatment modalities have been ineffecitve. In 1990 the American Dietetic Association released a position paper urging registered dietitian nutritionists (RDNs, then called RDs) to take action and become integral members of the treatment team [3] but this was never implemented. In 1994 a survey of RDNs working for the U.S. Indian Health Service documented that 57/197 (29%) had received special training focused on nutrition in substance abuse treatment in the form of a workshop [4]. However, specialized training programs for RDNs working in non-governmental SUD treatment centers are not currently available. Given the fact nutrition counseling has yet to be defined for SUD, we hypothesized that RDNs are an uncommon member of the treatment team. This research draws upon the biopsychosocial model of health and wellness [5, 6].

In the early 1980s McLellan and colleagues began evaluating the effectiveness of alcohol and drug treatment and found that longer treatment was more effective than short-term (45-day) [7]. They suggested that eliminating the acute signs of detoxification and withdrawal was much easier than making improvements in areas such as physical health and psychological function, which leave patients at high susceptibility to relapse following discharge. Their work suggested a need for different treatments based on psychiatric severity

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[8] and recommended additional measures such as general health status inventories, psychological symptom inventories, among others [9]. They argued that "addiction-related" problems that compromise personal health and impair social function should be addressed as part of the treatment [9]. Addictions are similar to other chronic disorders such as arthritis, hypertension, asthma, and diabetes, requiring long-term or life-time management [10]. It remains unclear exactly what that long-term management of SUD should entail, and how individuals with co-occurring disorders should be treated.

In the early 1990s McLellan's team developed a Treatment Services Review questionnaire to assess the type of treatment received by patients during rehabilitation [11]. Research using this tool found that adding social services to public sector programs substantially improved addiction treatment outcomes [12]. However, none of this research identified nutrition education as an important part of the rehabilitation process. In 2016, the National Survey of Substance Abuse Treatment Services (N-SSATS) conducted by the Substance Abuse and Mental Health Services Administration (SAMHSA) evaluated the entire scope of treatment services throughout all 50 states (14,399 facilities) including ancillary services such as acupuncture, without a single mention of food-based nutrition [13].

It is well-known that patients with longstanding SUDs have associated malnutrition [14–17], preference for nutrient-poor food [18–21], compromised gastrointestinal health [22–24], and disordered eating [25–31]. Given that opioids are now recognized as a major public health crisis, a strong case can be made to provide nutritional support for patients in recovery programs. There is strong evidence of neuroendocrine links between the gastrointestinal tract and brain [32–35], which has implications for anxiety, depression, as well as cravings [22, 23, 36–38]. Traditional wisdom from Alcoholics Anonymous (1939) suggests that recovery should consider a "first things first" approach implying that substances other than alcohol (sweets, coffee, cigarettes) should not be reproached while the primary ailment is being addressed [39]. While this strategy has history and merit, one could argue that changes in society that have led to obesity [40, 41], escalating diabetes rates [42, 43], and food addiction [44–46] necessitate that this approach be reevaluated.

Dietary recall studies have shown that substance abusers have low intake of fruits and vegetables and high intakes of low fiber sugar-sweetened foods and beverages [17, 20]. Individuals with SUDs typically have lower BMIs while using [15] and gain weight during treatment [47]. Excessive weight gain during recovery has been described in adolescents [48], men [25], and women [26, 49], all of which have been associated with eating disorder (ED) symptomatology. Several studies have shown significant overlap between SUDs and EDs, with estimated comorbidity ranging from 3 to 50% [27, 28]. In the SUD population, loss-of-control eating associated with binge eating disorder and bulimia nervosa is more common that anorexia nervosa restrictive-type [50]. Recently several authors have recommended integrated treatment for SUD and ED rather than separate sequential treatments [27, 29, 51]. There is a pressing need for more research on the role of the RDN in SUD treatment facilities, particularly given the co-occurrence of EDs and gastrointestinal complications [52].

A recent study focused on wellness services in residential treatment centers in Massachusetts found that less than half offer education on nutrition [53]. This study also found that programs appear to offer nutrition education more frequently than providing the type and frequency of food that promotes health (i.e. fruits and vegetables). Rather, the foods being offered in these centers mirrors the Standard American Diet, which is high in refined sugars and highly processed foods [53]. Financial resources were ranked as the most important barrier to bringing in new wellness/nutrition initiatives into their program. Currently insurance does not reimburse for nutrition services in SUD treatment settings. In the private sector, there is a growing trend towards "holistic" approaches to recovery including healthful eating, but this has not adequately investigated.

Methods

This study was approved by the University of Southern California Institutional Review Board. A list of treatment facilities was compiled on June 29th, 2016 using the Behavioral Health Treatment Services Locater on the SAMHSA website. Our search criteria included a listing of substance abuse as primary focus of care, within a 25-mile radius of Los Angeles. Data were collected between July 2016 and March 2017.

Each facility was contacted by telephone and asked to participate in a brief survey lasting 1–5 min. The survey questionnaire was scripted and created by the authors to be as simple and concise as possible. Facilities that did not answer our call or were unable to complete the survey at the initial encounter were contacted two additional times. Respondents were first asked whether their facility offered nutrition counseling to their clients (yes or no). Those offering nutrition counseling were asked about the format of counseling (group, individual, or both), the credentials of the counselor, and number of hours available each week. Additionally, all respondents were asked to provide potential barriers limiting their ability to offer nutrition counseling. Facilities were separated into those that offer residential level of care (including those offering a full continuum of care) and those that offer outpatient services only (partial

hospitalization program, intensive outpatient, outpatient). The data were entered into an Excel spreadsheet and the results were tabulated. Odds ratios were computed as well as Fisher's exact test for statistical significance.

Results

A total of 189 facilities were initially identified. Facilities with disconnected telephone numbers (n = 11) and repeated listings (n = 8) were removed from the sample, leaving 170 remaining eligible facilities. Of these, 31 facilities were unable to be contacted (after 3 attempts), and 11 declined to participate (see Fig. 1). Of the 61 facilities not included, 41% offered residential level of care and 59% offered outpatient services only. In our final sample (n = 128), 37.5% offered residential level of care, and 62.5% offered outpatient services only. We did not detect a difference between excluded facilities and those in our study group ($p = 0.75$).

Nutrition Counseling

Only 39 facilities (30.5%) indicated they provide some form of nutrition counseling on-site (see Table 1). The odds of a residential level of care offering nutrition services on-site was 2.7 times higher than outpatient only ($p = 0.02$). In total only 6.3% (8/128) of all facilities in our sample utilized RDNs. Although not statistically significant ($p = 0.15$) we also found that the odds of a residential level facility utilizing an RDN is 3 times higher than an outpatient only facility.

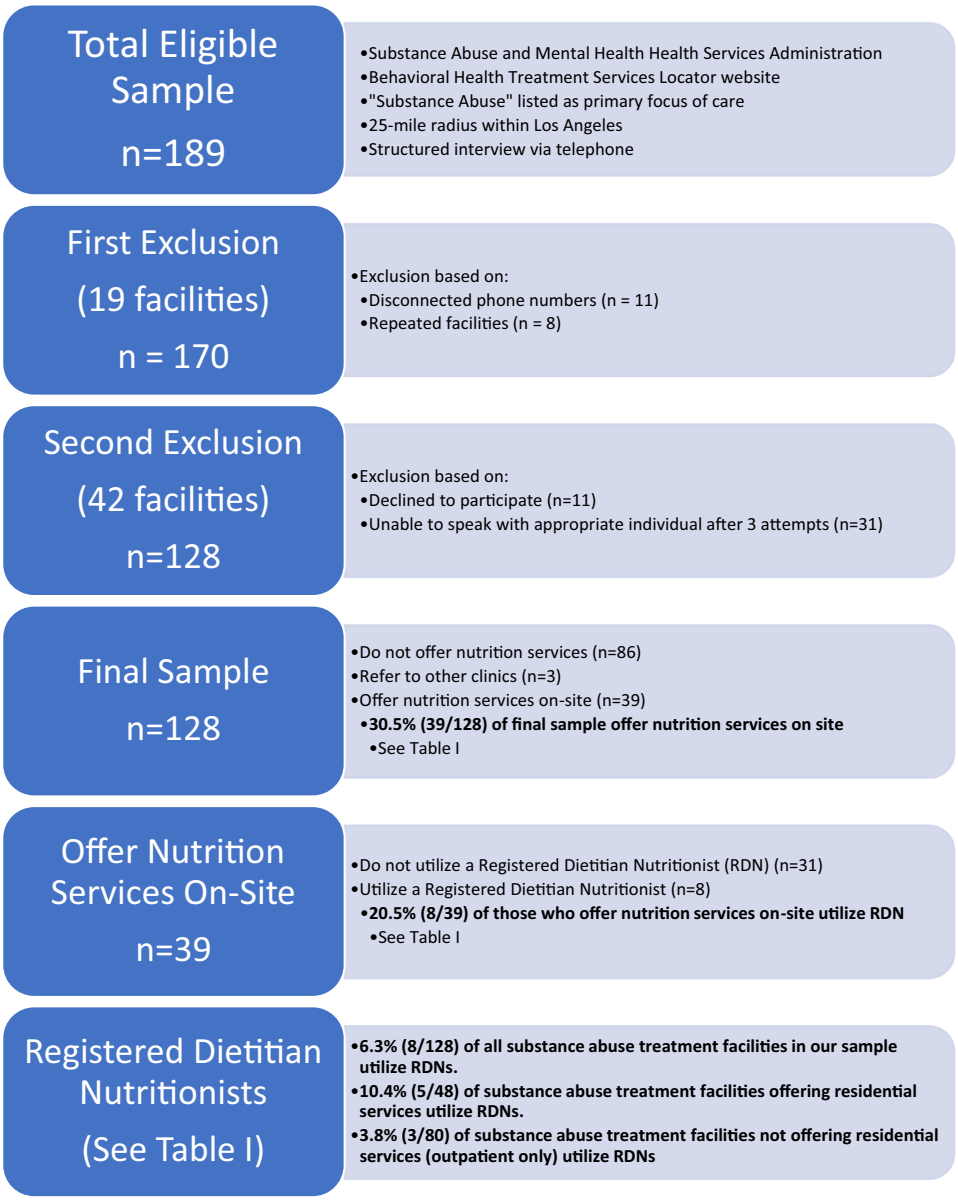

Fig. 1 Study flow and data summary of nutrition services in substance use disorder treatment centers in Los Angeles (2016–2017)

Table 1 Los Angeles SUD Treatment Facilities (2016–2017): Utilization of Nutrition Services by Type of Facility; Utilization of RDNs by Type of Facility; Credentials of Nutrition Service Providers

Utilization of nutrition services by type of facility (n = 128)	Offer nutrition services on-site	Do not offer nutrition services on-site	Totals
Offers residential level of care (n = 48)	21 (43.8%)	27 (56.3%)	48 (100%)
Outpatient only PHP/IOP/OP (n = 80)	18 (22.5%)	62 (77.5%)	80 (100%)
Totals	39 (30.5%)	89 (69.5%)	128 (100%)
Utilization of RDNs by type of facility (n = 39)	Utilize RDN	Do not utilize RDN	Totals
Offers residential level of care (n = 21)	5 (23.8%)	16 (76.2%)	21 (100%)
Outpatient only PHP/IOP/OP (n = 18)	3 (16.7%)	15 (83.3%)	18 (100%)
Totals	8 (20.5%)	31 (79.5%)	39 (100%)
Credentials of nutrition service providers (n = 39)	Number of facilities		Percentage
RDN	8		20.5
Other nutritionist	9		23.1
Counselor	16		41.0
Social worker	1		2.6
Other professional	5		12.8
Totals	39		100

SUD substance use disorder, *PHP* partial hospitalization program, *IOP* intensive outpatient, *OP* outpatient, *RDN* registered dietitian nutritionist

Type of Services Offered

Of the 39 facilities that offered nutrition services, approximately half of them offered only group nutrition sessions (n = 20), while the other half offered either individual counseling or a combination of group and individual counseling (n = 19). Although not statistically significant ($p = 0.13$) we found that facilities utilizing an RDN are 4.2 times more likely to offer individual counseling than facilities not utilizing an RDN.

Credentials of Educator

Fewer than a quarter of the facilities that offered nutrition services utilized RDNs (n = 8), and more employed non-RDN "nutritionists" (n = 9). The remaining 22 facilities reported that other professionals provided nutrition education (see Table 1).

Barriers

The 39 facilities directly offering nutrition counseling reported several reasons preventing them from offering further services. The most common were: satisfied with level of care/no need for additional care (n = 17, 43.6%), budgeting restraints (n = 8, 20.5%), and difficulty coordinating services (n = 4, 10%). Facilities without nutrition counseling (n = 86) reported several unique reasons. The most common barrier is the belief that the facility is not conducive for nutrition counseling (n = 26, 30%). Other barriers include lack of need in nutrition counseling (n = 11, 12.8%), budgeting restraints (n = 10, 11.6%) and difficulty coordinating services (n = 4, 4.7%). An additional three facilities had never considered nutrition counseling as part of their treatment plan. Seven facilities (8.1%) stated they believe including nutrition services to be important and expressed an interest in including services in the future.

Discussion

Of the 129 respondents included in this study, less than one-third offer nutrition services. The presence of nutrition services is low at all levels of SUD care in Los Angeles. Given what is known about the importance of nutrition in SUD recovery, this appears to be a missed opportunity to improve treatment outcomes. Of those that offer nutrition services, less than one-fourth utilize the expertise of the RDN. Overall RDNs are utilized by < 7% of SUD treatment centers in Los Angeles. This suggests a need for RDNs to be more involved in this important sector of the healthcare system. This study supports the recommendations from the 1990 position paper [3] to include RDNs in SUD treatment programs.

Some treatment facilities resist implementing nutrition into their program because they do not see its value, or because it is not required, as evidenced by 12.8% stating a "lack of need" as a barrier to implementation. Other possible barriers include the fact that healthful food is more

expensive (13.9% overall identified budgeting restraints) and for-profit businesses need to consider economics, consistent with previous findings [53]. More qualitative data on the barriers to implementation of nutrition services in SUD treatment settings is needed. We hypothesized that RDNs are more likely to be utilized by SUD treatment centers in the private sector than in publicly funded facilities, but this study did not differentiate between limited liability corporations and government-funded institutions. National data suggests that for-profit facilities increased from 28% in 2006 to 35% in 2016 [13].

Several studies have shown that group nutrition education can lead to better overall outcomes related to nutrition and health [54–58] together with sustained sobriety [59]. Analysis of services within the Department of Veterans Affairs revealed that nutrition education in a group setting was associated with positive alcohol and drug treatment outcomes, although no one intervention model was consistently utilized [57]. The RHEALTH (recovery healthy eating and active learning in treatment houses) intervention in Upstate New York included weekly nutrition education including handouts with key nutrition concepts, activities such as cooking and tasting, and improvements to the food environment [54]. Researchers found that close collaboration with treatment staff and interventions tailored to each site was important for successful implementation. Our work in Los Angeles has demonstrated that a culinary intervention in a residential SUD treatment can be effective despite operational challenges [60]. Specific topics for group education in SUD treatment settings have been recommended by us elsewhere and include topics such as eating for mental health, gut microbiome, caffeine and nicotine, body image and disordered eating, and cooking in recovery [61].

Early abstinence from drugs and alcohol can be very stressful. Given the emotional challenges of detoxification and withdrawal, it makes sense to initially allow familiar or comforting foods, but at a later stage this should be assessed by a dietitian with experience in behavioral health. The optimal time frame to initiate nutrition interventions is yet to be established, but we believe it should be early in the recovery process. SUD treatment outcomes may benefit with the addition of nutrition support. Nutrition education, individual dietary counseling, and screening for EDs should be standard protocol in SUD treatment. Our study suggests that there are gaps in outpatient treatment centers, where nutrition services such as educational groups and individual counseling can have an impact. Life skill development for self-care should consider hands-on nutrition education to improve the chances of successful reentry.

Limitations

Treatment centers were included by their own identification of substance abuse as primary focus of care, but this was not verified by the authors. It is also likely there are facilities within 25 miles of Los Angeles not listed on the SAMHSA Locator. Data were collected from the best available willing participant over the phone, but protocols for determining who we spoke to were not standardized. Lastly, the data represent Los Angeles and may not be representative of SUD treatment centers in other places where treatment programs differ.

Conclusion

Substance abuse continues to increase creating a devastating impact on individuals, families, communities, and the healthcare system. The evolving opioid crisis will require a reassessment of entrenched treatment protocols for addictive disorders. It is well established that SUDs are associated with neglected health including nutritional deficiencies. Emerging evidence supports the positive impact of nutrition interventions during recovery from alcohol and drug abuse, but more data are needed. SUD treatment protocols may benefit from nutrition intervention as a treatment modality. RDNs are qualified to provide nutrition education and counseling in SUD treatment facilities but are represented at < 7% of facilities in Los Angeles. There is a timely need to incorporate novel approaches to treatment and recovery, particularly in outpatient settings.

Author Contributions MS collected the data and contributed sections to the manuscript. DW assisted with data collection protocols and wrote the first draft of manuscript. MP edited and contributed to the manuscript. All authors reviewed and commented on subsequent drafts of the manuscript.

Compliance with Ethical Standards

Conflict of interest David Wiss is the founder and owner of Nutrition in Recovery LLC which provides nutrition services to substance use disorder treatment facilities in Los Angeles, CA, including some in the sample. Mr. Wiss was not involved in contacting any of the facilities.

Ethics Approval This study was approved by the University of Southern California University Park Institutional Review Board under Study ID: UP-16-00334.

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