The Effect of Registered Dietitians on Quality of Life, Eating, and Nutrition Knowledge of Adults with Eating Disorders

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Introduction

Eating disorders (ED) are psychiatric disorders that involve abnormal behaviors with eating or behaviors to control weight. Lifetime ED prevalence worldwide from 2000-2018 was 8.4% for females and 2.2% for males, higher with different diagnostic criteria. ED lead to the second highest premature mortality rates of all mental illnesses, significant medical complications, and decreased quality of life (QOL), and current treatment methods are ineffective at inducing lasting remission for a significant percentage of patients with ED. Factors determining ED recovery have been identified in previous research **(Table 1).** RDs are not always included in ED treatment. Studies have shown that RDs can improve health-related behaviors, health outcomes, and QOL in conditions such as dyslipidemia. To date, however, few studies investigate the effects of including an RD in ED treatment, despite many clinical recommendations to do so.

Purpose

To compare the change in QOL from pre-treatment to present for adult patients with ED and the difference in this change between RD and non-RD treatment groups and to discover patient views of RD effects on ED recovery, behavior, knowledge, and self-efficacy.

Methods

This study was a mixed-methods qualitative and quantitative study, consisting of a one-time, 8-10-minute online survey through Survey Monkey. The survey included questions on demographics and ED treatment history, the Eating Disorder Quality of Life (EDQOL) scale in retrospective pre-post design, an open-ended narrative response - effects of RDs on recovery, and questions regarding the extent (5-point Likert-type scale) of RD influence on knowledge, behaviors, and self-efficacy related to food and the body.

Researchers emailed study information across the U.S. to ED healthcare providers, including RDs, psychologists, medical doctors, and multidisciplinary treatment centers, who provided patients/clients with study details and an online link for participation. Inclusion criteria were self-identified as having received treatment for an ED and 18+ years old. Exclusion criteria were pregnant or lactating women, living outside the U.S., <18 years old, or currently hospitalized for an ED.

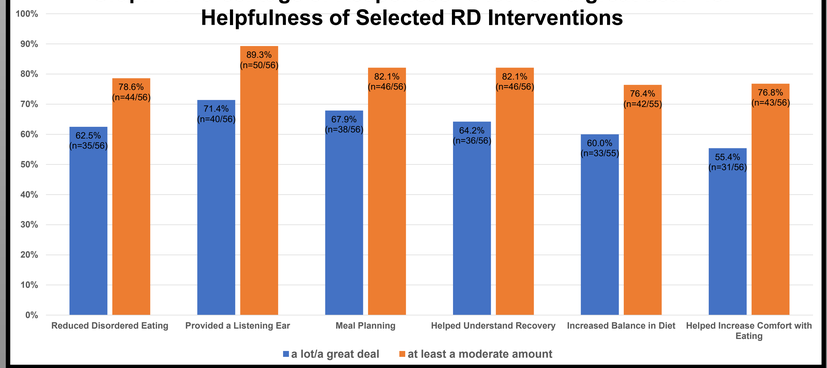
Survey Monkey was utilized to collect results. IBM SPSS version 28 statistical package (SPSS Inc., Armonk, NY) was used for coding and analyzing statistics, including mean, range, and standard deviation for variables. Means were compared between the participants who did and did not have an RD as a part of their treatment team. Significance level was set at α=0.05. Qualitative data regarding the effects of RDs on ED treatment was individually coded and analyzed by two researchers, then consensus reached.

Table 1: Literature Review of ED Recovery Definition and Contributing Factors

Study	Recovery Component	Measure
Bardone-Cone et al, 2010	Diagnostic	DSM-IV: ED defined by disordered eating thoughts, distress, behaviors (restriction, purging, bingeing), and associated medical complications
	Behavioral	Absence of binge eating, purging, or fasting for past 3 months
	Psychological	EDE-Q. Categories: restraint, eating concern, shape concern, weight concern, and general
	Physical	BMI $\geq$ 18.5
Koller et al, 2020	Body acceptance	Body Acceptance Scale
	Intuitive Eating	Principles 1-10

- DSM-IV: Diagnostic and Statistical Manual of Mental Disorders fourth edition, ED: eating disorder, EDE-Q: Eating Disorder Examination Questionnaire, BMI : Body Mass Index

Graph 1: Percentage of Responses "a lot" or "a great deal" for Helpfulness of Selected RD Interventions



Results

Participants (n=70) were 87.1% (n=61) white, 90% (n=63) female, and mean age 30.5+/-10.3 years (n=70, range=18-59 years). Almost 86% (n=60/70) of participants were categorized within the RD treatment group. Mean age, race/ethnicity, and age at beginning of disordered behaviors were similar in both groups.

For both the RD treatment and non-RD treatment groups, there were statistically significant differences between the mean QOL pre-test score and mean QOL post-test scores (i.e. QOL improved in each group) (RD treatment group: n=56, t=9.735, p<0.001; Non-RD treatment group: n=10, t=2.977, p=0.008) (**Graph 2**). The effect size of treatment was large for both groups ($Cohen's\ d$ RD treatment group=1.301, $Cohen's\ d$ non-RD treatment group=0.941). There was no significant difference in mean pre-test or post-test QOL scores between the two groups (pre-test: t=0.822, p=0.414; post-test: t=-0.594, p=0.555), meaning that QOL was statistically similar between groups both before and after treatment. There was also no statistically significant difference in mean QOL pre-test – post-test scores between the groups (comparison of change in QOL) (p=0.193).

Overall, participants rated RDs as helpful with many aspects of eating behaviors, knowledge, and emotional responses, and the majority described RDs as helpful, supportive educators (**Graph 1, Table 2**).

Table 2: Narrative responses (n=46) to "How has an RD affected your recovery?"

Themes	Exemplifying Responses	Referents (n, %)
Helpful	"It's so nice having someone who actually knows how to help."	10, 22%
Provided tools/support	"She believes in me when I do not believe in myself to fully recover. She supports me like no one else ever has in my recovery."	25, 54%
Meal planning	"I hear my first dietitian's voice in my head about how to set up a meal (the components), and I still try to do it that way."	7, 15%
Educated	"Without the science, resources, and personal anecdotes that my RD provided me with, I do not think I would have been able to recover the way I did."	13, 28%
Changed how I view food	"It has changed my perspective on a lot of the ways I approach food and has made for an overall better relationship with food."	12, 26%
Saved/changed my life	"Working with my RD saved my life."	8, 17%
Reason I am in recovery	"I wouldn't be in recovery without my rd she changed my entire life"	5, 11%
Negative or mixed	"I would 100% not attribute my experiences of recovery to working with an RD. It was fine that they weighed me - but I didn't really find them all that helpful."	7, 15%

Conclusion

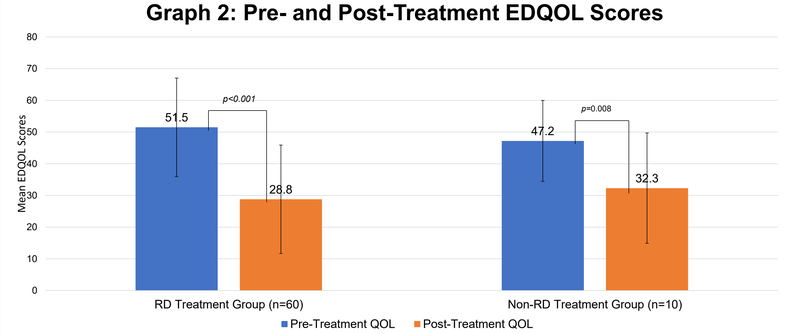
A few previous, mostly older studies have examined the effects of nutrition counseling or RDs on ED treatment and have shown varying results. Most were conducted over 15 years ago and usually did not include an RD in the nutrition intervention. To the researchers' knowledge, the current study is the first study that directly measures the effects of RDs on QOL in ED treatment and qualitative patient perspective of the effect of RDs on ED treatment and is the only multi-participant study from at least the last 20 years that measures the impact of RDs on eating behaviors and thoughts.

The present study demonstrated RDs as helpful in many behaviors and thoughts associated with ED, some of which correlate closely with components of recovery from ED, per previous research (**Table 1, Graph 1**), or with Standards of Practice for Registered Dietitian Nutritionists (RDNs) in Eating Disorders. Bardone-Cone et al's 2010 research defined ED recovery as diagnostic, behavioral, physical, and psychological. Between 30-63% of respondents from the present study rated RDs having helped *a lot/a great deal*, 63-82% at least *a moderate amount* in interventions related to three of these components. Koller et al further identified body appreciation and Intuitive Eating as factors in ED recovery in their 2020 research study. Greater than 66% of respondents from the present study rated RDs at least moderately helpful in interventions related to these factors. Finally, the Standards of Practice for ED RDs provide guidance for appropriate RD interventions for ED patients. Between 45-71% of respondents from the present study rated for RDs having helped *a lot/a great deal* and 67-89% at least *a moderate amount* for interventions similar to several indicators from the Standards of Practice.

Some strengths of the present study were its control group (for the EDQOL), mixed methods design, validated QOL scale, inclusion of participants who had received treatment for any length of time (reduces attrition bias), and inclusion of both participants with current or recovered ED. Some limitations included small sample size, non-randomized, cross-sectional study design, some unvalidated questions (helpfulness of RDs), demographic and ED treatment history differences between groups, QOL scale utilized was validated in previous research in homogeneous sample, present study homogeneity in race and gender, and possibility for selection bias.

Treatment for ED by RDs is not currently covered by Medicare except at the inpatient level of care, and Medicare guidelines influence private insurance coverage. Although many guidelines promote including RDs in ED treatment, and participants from the present study generally viewed RDs as helpful in a variety of ways including in interventions related to ED recovery, access to RDs for ED treatment is limited. Results from the present study help to inform current RD strengths and areas to improve for helping patients to achieve full ED recovery. Future research needs to define and validate ED RD interventions and explore the findings of this study with larger and more diverse sample sizes to better determine the role of an RD in ED treatment and inform treatment guidelines and public and private insurance policy.

Graph 2: Pre- and Post-Treatment EDQOL Scores



Statistical significance set at α<0.05
Within-group results significant (see graph); paired t-tests used
Between-group results insignificant; independent sample t-tests used

RD: Registered dietitian
QOL: Quality of life
EDQOL: Eating Disorder Quality of Life Scale