

Understanding Service Utilization for Individuals Struggling with Eating Disorders

**PSYC 513: Statistical Analysis of Administrative Health and
Linked Longitudinal Encounter Data**

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Why Eating Disorders?

- › Lifetime prevalence for women: ~3% (Arcelus et al., 2011)
- › Anorexia nervosa (AN) mortality rate estimates: 10% – 15% (Sullivan, 2002)
- › High rates of dieting/restrictive eating behaviours among youth (Sundgot-Borgen et al., 2004)
- › Incidence rates may be rising (National Eating Disorder Information Centre, 2014)

Research on Eating Disorders

- › AN mortality rates higher than bulimia nervosa (Arcelus et al., 2011)
- › Often comorbid with other mental illnesses and disordered alcohol use (Braun et al., 1994; Bulik et al., 2004)
- › High morbidity and mortality rates (Sansone & Levitt, 2010)

Service Engagement

- › Most research has focused on predictors of mortality
- › Need for a better understanding of how these individuals interact with the health care system
- › Some researchers have called for studies utilizing electronic health records to create a more comprehensive understanding of the dynamic nature of ED trajectories and interactions with the health care system (Arcelus et al., 2011)

Project Goals

Exploratory, descriptive understanding of this population

- › (e.g., age at ED diagnosis, prevalence of AN and BN, severity of ED, comorbid diagnoses, substance use, BMI at onset and over time)

Investigate service engagement and associated risk factors

- › Self-harm and malnutrition
- › Crisis-response units and short-term assessment and treatment services
- › Effectiveness of eating disorder-specific treatment services

Study Design

- › Clinical encounter-level data for all individuals who have had at least one eating disorder diagnosis (ICD-10 code: 'F50') from 2002 to present
 - › n_people = 342
 - › n_encounters = 12000
 - › n_events = 14103

gender	n_people	n_encounters	n_events
Female	309	11207	13125
Male	33	793	978

gender	age_group	n_people	n_encounters	n_events
Female	05 - 09	9	53	57
Female	10 - 14	87	766	902
Female	15 - 19	145	2573	2935
Female	20 - 24	91	2124	2293
Female	25 - 29	51	970	1087
Female	30 - 34	35	751	862
Female	35 - 39	27	613	685
Female	40 - 44	25	625	718
Female	45 - 49	26	443	664
Female	50 - 54	24	874	1118
Female	55 - 59	20	373	464
Female	60 - 64	12	309	358
Female	65 - 69	8	193	269
Female	70 - 74	6	190	239

gender	age_group	n_people	n_encounters	n_events
Male	<1	1	2	2
Male	01 - 04	1	39	45
Male	05 - 09	3	21	23
Male	10 - 14	10	92	103
Male	15 - 19	5	23	31
Male	20 - 24	6	33	40
Male	25 - 29	7	167	215
Male	30 - 34	2	50	50
Male	45 - 49	2	58	67
Male	50 - 54	2	30	30
Male	55 - 59	1	2	2
Male	60 - 64	3	54	73
Male	65 - 69	6	109	122
Male	70 - 74	4	35	63

Proposed Analyses

Descriptive

Inferential

- HLMs and GLMMs to model outcomes and associated risk factors (moderators)
- Self-harm
- Malnutrition
- Interactions with crisis-response units
- Interactions with short-term assessment and treatment programs

event_detail	n_people	n_encounters
F50.9, Eating disorder unspecified	90	103
F50.0, Anorexia nervosa	77	127
F41.9, Anxiety disorder unspecified	51	65
F50.2, Bulimia nervosa	44	54
F32.9, Depressive episode unspecified	43	57
F32.2, Sev depressive episode wo psych symptoms	38	79
F60.3, Emotionally unstable personality disrd	31	82
X60, Intent self poison anlgsc antipyr antirhm	29	44
T39.1, Poisoning by 4-Aminophenol derivatives	29	37
E87.6, Hypokalaemia	27	38
R45.8, Oth symptoms signs inv emotional state	26	40
E86.0, Dehydration	25	34
X61, Intent selfpoison antiep sed hyp psytrp	23	38
F41.1, Generalized anxiety disorder	21	25
F43.1, Post traumatic stress disorder	21	40
F50.8, Other eating disorders	21	25
N39.0, Urinary tract infection site not spec	20	35
T43.2, Poison by oth and unspecified antidprsnts	17	23
N17.9, Acute renal failure unspecified	16	22
F33.2, Rec depres disrd curr sev wo psych	16	19
E46, Unspecified protein energy malnutrition	15	18
K59.0, Constipation	14	16
E87.1, Hypo osmolality and hyponatraemia	13	33

n_people	n_encounters	palette_colour_name	service_type	unit_name
76	224	Crisis Response Teams - One-time, High-intensity - Emergency Response	Crisis Response- Community	Integrated Mobile Crisis Response Team
30	56	Crisis Response Teams - One-time, High-intensity - Emergency Response	Crisis Response- Community	Integrated Mobile Crisis Response Team
23	115	Crisis Response Teams - One-time, High-intensity - Emergency Response	Crisis Response- Community	Crisis Services – Nanaimo
21	72	Crisis Response - Walk-in	Crisis Response- Community	Walkin Clinic – Nanaimo
14	56	Crisis Response Teams - One-time, High-intensity - Emergency Response	Crisis Response- Community	Crisis Response Team – Duncan
8	28	Crisis Response - Walk-in	Crisis Response- Community	Walkin Clinic - Nanaimo

Study Limitations

Defining predictors (e.g., comorbidities) and outcomes (e.g., self-harm)

- Need for information and discussion at level of service

Duration of eating disorders

Potential lack of power for between-person comparisons

event_year	n_people	n_encounters	n_events
0	27	28	28
2002	2	2	2
2003	1	1	1
2005	1	1	1
2006	3	4	4
2007	3	3	3
2008	4	5	5
2009	10	11	11
2010	35	43	43
2011	199	1144	1327
2012	220	1723	1978
2013	239	1768	2217
2014	255	2258	2676
2015	254	2236	2605
2016	253	1990	2368
2017	178	788	834