

**GPimED: General Practice improving management of
Eating Disorders**

**Can a one hour online educational intervention
improve the detection and management of patients
with Eating Disorders by General Practice Trainees?**

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Abstract

PROBLEM STATEMENT

Eating disorders (ED) are a serious and potentially life-threatening group of illnesses. In Australia, there are an estimated 1.2million patients currently living with ED. Studies have shown shows that diagnosis and management of these illnesses are inadequately covered during medical school and subsequent General Practice(GP) training and the doctors feel poorly prepared and lack confidence in managing these patients. This can result in a delay in diagnosis and appropriate referral thus significantly contributing to patient morbidity and mortality and increased financial burden on the community.

Patients with ED present repeatedly to GP with a myriad of signs and symptoms. There is often delay in diagnosis due to both patient and doctor factors and research has also found that this delay coupled with lack of appropriate management can exacerbate the morbidity and potential mortality. Within this group of disorders, Anorexia Nervosa (AN) has the highest mortality rate of any psychiatric illness with suicide rates 32 times higher than the general population and a mortality rate of 10%.

General Practitioners (GPs) are often time poor and lack the knowledge to adequately manage patients with ED. Online education for GPs is becoming more popular as it is cost effective, convenient and allows rural and remote GPs access to educational material they might not otherwise be able to access if it is available only via face to face delivery. In 2016, a one- hour online ED module was launched by the Royal Australian College of General Practice (RACGP) and yet there has been no evaluation undertaken of its effectiveness in changing clinician behaviour.

AIM

The primary aim is to test whether a one hour online educational module on Eating Disorders increases the likelihood of an appropriate response to a patient with a possible Eating Disorder among General Practitioner Registrars (i.e. GPs in training), compared with a non-ED specific intervention as assessed by the total scores achieved on pre and post intervention

testing.

METHODS

The trial design was a randomised, parallel-group study. Participants were recruited from the two Victorian General Practice Training Consortia: Murray City Country Coast (MCCC) and Eastern Victoria GP Training (EVGPT). The intervention group completed a one-hour online ED module and the comparator group completed an online Youth Mental health module. Baseline surveys included demographic questions, Likert scales regarding confidence in dealing with youth mental health issues and satisfaction in their student and post graduate training in these issues. A clinical case was designed in the format of Key Feature Problems (KFPs) which are a component of the Royal Australian College of General Practice Fellowship examination. It was designed to assess baseline competence in the recognition and management of a probable eating disorder by assessing identification of a possible ED through history including screening tools, examination and investigations. Follow up surveys were completed after 6 weeks using clinical scenarios which reassessed the competencies regarding recognition and management of a probable eating disorder. The potential sample size from both training consortia was 270. Quantitative and qualitative analysis was conducted within the constraints of eventual low recruit numbers which is a recognised difficulty when working with general practice.

The primary outcome was the difference between the intervention group and the control group on mean change in total scores on Key Feature Problem (KFP) questions from baseline to post-intervention.

There were three secondary outcome measures:

- Improved knowledge regarding eating disorder screening tools as evidenced by improved scoring with the SCOFF which is a validated screening tool using 5 simple questions in both the baseline and post-intervention survey clinical case responses.
- Satisfaction with training in ED at medical student and postgraduate level measured using a 5-point Likert scale.
- Confidence in dealing with youth mental health issues was calculated from survey responses to two questions in the baseline survey.

RESULTS

There were only small number of recruits: 15 respondents in total with 8 completing all components of the study. Despite the small sample, there was measurable improvement in many parameters assessed cross both arms of the trial. In particular an increase in the identification of ED as a differential diagnosis and improved referrals to health professionals considered integral to the evidence based best practice multidisciplinary team approach to ED management. This team approach results in better outcomes for the patients.

SIGNIFICANCE

This study aimed to shed light on the effectiveness of online education in upskilling GP trainees. If the ED module proved to be successful, it could lead to improved treatment of patients with evolving or established eating disorders in the General Practice setting and potentially reduce the rates of delayed diagnosis resulting in improved outcomes. The literature indicates that patients with an ED present up to 5 times more frequently to primary care than demographically matched peers. General Practice is thus ideally placed to recognize these patients, to make a timely diagnosis and initiate appropriate investigation, management and referrals. The literature also indicates when diagnosis and appropriate intervention occurs within the first three years of the disorder developing, there is a greater than 40% chance of complete recovery. On November 1st, 2019, the Australian Federal Government initiated \$110 million in extra funding for increased support for patients with a serious ED. This support can be accessed if the patient has an Eating Disorder Plan completed by a GP with appropriate screening and provision of the requisite history, examination and investigations.

CONCLUSION

The results of the study demonstrated that baseline competencies for GP Registrars in recognising and managing ED were poor but improved after completing both the intervention and comparator online learning modules. The recognition of the importance of a multidisciplinary team was a key improvement in the intervention group in particular.

Declaration

This is to certify that

1. This thesis comprises only my original work towards the Master of Medicine (Research).
2. Due acknowledgments have been made in the text to all other materials used.
3. The thesis is less than 50,000 words in length, exclusive of tables, figures, maps bibliographies and appendices.
4. The iThenticate similarity report of 29% includes the appendices. These contain material directly from the attributed websites including but not confined to Medicare Australia, RANZCP Eating Disorders guidelines, No Wrong Door and the InsideOut Institute.

Signature: ...

JENNIFER ALICE CONWAY

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Table of Contents

Abstract	ii
Declaration	v
Acknowledgements	vi
Table of Contents	viii
List of Tables	xii
List of Figures	xiii
List of Abbreviations	xiv
Chapter 1: Introduction	1
1.1 Problem statement	1
1.2 Aim of study	3
1.3 Significance of this research	4
1.4 Overview of the study	4
Chapter 2: Background	6
2.1 Eating disorders as an increasing Australian Government priority	6
2.2 Setting the scene for GPimED	9
2.3 Eating Disorders-prodromal symptoms, definitions and symptoms	9
2.4 Prevalence	12
Vulnerable groups	12
2.5 The burden of Eating Disorders	13
Morbidity and mortality	13
Financial costs	13
2.6 Diagnostic delays and consequences	14
2.7 General Practice Treatment of Eating Disorders:	16
GP Factors	16
Patient Factors	18
2.8 Role of General Practice	20

	Use of screening tools	20
2.9	Current Australian training opportunities and gaps	22
	Medical student education	22
	Doctors in training	23
	Comparison with training in UK and North America	23
	Current available resources in Australia	23
	RACGP Guidelines	23
	Other available educational resources	24
	Face to face training	24
2.10	Current evaluation of ED interventions for GPs	25
2.11	Summary	26
 Chapter 3: Changing Clinician Behaviour through Education: setting the scene for GPimED		
	GPimED	28
3.1	Implementation Science	28
	Theoretical Domains Framework (TDF)2005	29
	TDF in action: The Implement study 2012	31
	COM-B 2011	33
3.2	Evidence regarding eLearning	35
3.3	Summary	38
 Chapter 4: Research Aims		
4.1	Background and Rationale	39
4.2	Aims	40
	Primary and Secondary Aims	40
4.3	Hypothesis	40
 Chapter 5: GPimED Methods		
5.1	Study Design	41

5.2	Participants	42
	Eligibility and exclusion criteria	43
5.3	Recruitment	44
5.4	Sample Size Calculation	44
5.5	Rationale for method selection	45
5.6	Randomisation and Blinding	46
5.7	Intervention Arm	46
	Content of intervention Module	48
5.8	Comparator Arm	53
5.9	Survey Pilot	56
5.10	Measures	57
	Primary Outcome Measures	57
	Secondary outcome Measures	58
	Other measures	59
	Demographics	59
	uMARS	59
5.11	Procedures	60
	Baseline Surveys	60
	Reminders	61
	Data Collection	61
	Statistical Analysis	61
5.12	GPimED Study Design in context of implementation Science	62
Chapter 6: Results		63
6.1	Participants	63
6.2	Participant characteristics	66
6.3	Primary Outcome	68
	Baseline survey scores compared with Post intervention scores	68
	Total scores t-tests	69

	Examination scores t-tests	71
	Investigation scores t-tests	71
	Differential diagnosis scores t-tests	71
	Multidisciplinary team scores t-tests	71
6.4	Secondary Outcomes	72
	SCOFF scores	72
	Satisfaction and Confidence	72
	Follow up Surveys	73
6.5	Implementation Science mapping of GPimED using TDF	74
Chapter 7: Discussion and Conclusions		79
7.1	Introduction	79
7.2	Findings	79
7.3	Limitations and strengths of study	82
7.4	Comparison with previous literature	85
7.5	Future research	87
7.6	Conclusions	89
7.7	Epilogue	92
References		93
Appendices		112

List of Tables

Table 2.1: Timeline of Government initiatives regarding Eating Disorders since 2010	8
Table 2.2: Comparative characteristics of DSM-5 ED Diagnostic Groups	11
Table 2.3: SCOFF Screening tool	21
Table 3.1: Glossary of TDF terms	30
Table 3.2: Steps to developing a theory informed IS intervention	32
Table 3.3: Mapping the Behaviour Change Wheel COMB-B to Theoretical Domains Framework	34
Table 5.1: Target recruitment cohort 2019	44
Table 5.2: Sample size calculation	46
Table 5.3: Questions for final feedback	61
Table 6.1: Comparison of characteristics of completers and non-completers	68
Table 6.2: Raw scores from baseline and post-module surveys	70
Table 6.3: Paired t-tests: Baseline survey and Post-module survey	71
Table 6.4: Baseline satisfaction and confidence	74
Table 6.5: Mapping of barriers and enablers	77
Table 6.6: Intervention components that address barriers	78
Table 7.1: RACGP gpLearning data for ED module uptake	92

List of Figures

Figure 3.1: The COM-B system	34
Figure 3.2: The Behaviour Change Wheel	36
Figure 3.3: Post-graduate Medical eLearning specifications model	38
Figure 5.1: Title screen” Recognising Eating Disorders in General Practice”	50
Figure 5.2: ED module screen-how information is presented to learned ED signs and symptoms	51
Figure 5.3: ED module screen- Screening tools	51
Figure 5.4: ED module screen-engaging with the ED patient	52
Figure 5.5: ED module screen-management strategies	52
Figure 5.6: ED module screen- case study “Phoebe”	53
Figure 5.7: Headspace module screen: Title screen	55
Figure 5.8: Headspace module screen: attitudes GP role in Youth Mental Health	56
Figure 5.9: Headspace module screen: LGBTIQ youth mental health	56
Figure 5.10: Headspace module screen: Summary page	57
Figure 6.1: Flow of Recruits through GPimED	66
Figure 6.2: Comparison of scores for answers to who to include in multidisciplinary team pre/post Intervention	73

List of Abbreviations

AFP	Australian Family Physician
AGPT	Australian General Practice Training
AJGP	Australian Journal of General Practice
AN	Anorexia Nervosa
ANZJP	Australian New Zealand Journal of Psychiatry
BCW	Behaviour Change Wheel
BEACH	Bettering the Evaluation and Care of Health study
BED	Binge Eating Disorder
BMI	Body Mass Index
BN	Bulimia Nervosa
CEDD	Centre for Eating and Dieting Disorders
CEED	Victorian Centre of Excellence in Eating Disorders
DSM-5	Diagnostic and Statistical Manual 5 th edition
EBP	Evidence Based Practice
EDV	Eating Disorders Victoria
EMPHN	Eastern Melbourne Primary Health Network
EPOC	Effective Practice and Organisation of Care
EVGPT	Eastern Victorian General Practice Training consortium
FRACGP	Fellowship of the Royal Australian College of General Practice
GP	General Practice
GPimED	General Practice: improving management of Eating Disorders
GPs	General Practitioners
HRQoL	Health Related Quality of Life
MARS	Mobile App Rating Service
MCCC	Murray City Country Coast training consortium
MRC	Medical Research Council

MRCGP	Member of the Royal College of General Practice
NEDC	National Eating Disorder Collaboration
PHN	Primary Health Network
PRECIS	Pragmatic Explanatory Continuum Indicator Summary
QUERI	Quality Enhancement Research Initiative
RACGP	Royal Australian College of General Practice
TDF	Theoretical Domains Framework
uMARS	User version of the Mobile App Rating Service
USP	Unannounced standardised patient

INTRODUCTION

"I am forever engaged in a silent battle in my head over whether or not to lift the fork to my mouth, and when I talk myself into doing so, I taste only shame. I have an eating disorder."

Hollow: An Unpolished Tale

Jena Morrow, 2010

1.1 PROBLEM STATEMENT

Eating Disorders (ED) are a serious, complex group of disorders that have major ramifications for the mental and physical health of the sufferer. The 2014 Royal Australian and New Zealand College of Psychiatrists Clinical Practice Guidelines for the treatment of Eating Disorders (Hay et al., 2014, p.978) states that: *"Eating disorders are characterised by disturbances of eating behaviours and a core psychopathology centred on food, eating and body image concerns"*. ED are usually preceded by a prodrome of disordered eating (EllynSatterInstitute.org, 2015) which includes a disturbed and unhealthy eating pattern involving restrictive dieting, compulsive eating or skipping meals. Disordered eating behaviours may include many, but not all, of the symptoms of eating disorders and typically impact adversely on an individual's emotional and social wellbeing. Disordered eating is a risk factor for developing an eating disorder with an estimated 10% of individuals who demonstrate disordered eating going on to develop an ED (Golden & Schneider, 2016). It is estimated that 20% of females in Australia live with disordered eating (Hay et al., 2008).

ED are potentially fatal yet are underdiagnosed and poorly treated in the primary care setting (Hay, Girosi, & Mond, 2015; Eating Disorders Policy Paper writing group, 2016). It is estimated

that in Australia there are approximately 1.2 million people living with an ED and 9.5% of the Australian population will be affected over their lifetime (Hay et al., 2015; National Eating Disorders Collaboration NEDC, 2012; Hay et al., 2014; InsideOut Institute, April 2018). Anorexia Nervosa (AN) has the highest mortality rate of any psychiatric illness with a mortality rate of 10% (Steinhausen, 2009; Pompili, Girardi, Tatarelli, Ruberto, & Tatarelli, 2006; Hoek, 2006).

Studies have shown that patients with ED present repeatedly to General Practice (GP) with a myriad of signs and symptoms (Ogg, Millar, Pusztai & Thom, 1997; Britt & Miller, 2015; Fursland & Watson, 2014). However, there is on average a 4-year delay between the first presentation and a diagnosis of an ED (Banas, 2013; Currin, 2009; Lafrance Robinson, Boachie and Lafrance, 2013). Diagnostic delay is due to a variety of reasons including non-disclosure from shame felt by the patient or symptoms that can be attributable to specific organ system issues e.g. gynaecological problems, gastrointestinal issues, musculoskeletal injuries or the very common tiredness and light headedness. These studies have also shown that the failure to recognise serious signs and symptoms, coupled with lack of appropriate investigation and management, can greatly exacerbate the morbidity and potential mortality of this group of disorders.

Studies also indicate that patients with an ED present up to 5 times more frequently to primary care than aged matched peers (Ogg et al. 1997; Britt & Miller, 2015; Fursland & Watson, 2014). General Practice is ideally placed to recognize these patients, make a timely diagnosis and initiate appropriate investigation, management and referrals. Research has shown that when diagnosis and appropriate intervention occurs within the first three years of the disorder developing, there is greater than 40% chance of complete recovery (Steinhausen 2002; Simon, Schmidt & Pilling, 2013; Johnston, Fornai, Cabrini & Kendrick, 2007).

General Practitioners (GPs) often lack the knowledge and confidence to adequately manage patients with ED (Flahaven, 2006; Banas, Redfern, Wanjiku, Lazebnik & Rome, 2013) a situation which has been attributed to a lack of ED training in both the undergraduate and

postgraduate curricula. Consequently, there have been repeated calls for further training for GPs in ED by those working in advocacy organisations. However, GPs working in a busy clinic typically have limited capacity to attend traditional training (Haslam, 2000 p.27). Online education for GPs is becoming more popular as it is cost effective, can be completed at a time and place that is convenient for the learner and allows rural and remote GPs access to educational material they might not otherwise be able to access (George, Zhabenko, Kyaw, Antoniou & Podazski, 2019).

In 2016 the Royal Australian College of General Practice developed an online ED education module from material provided by Eating Disorders Victoria (EDV) a Victorian Government funded educational and support organisation. It along with 103 other modules, is available on the RACGP gpLearning website with access available to College members, GP trainees and medical students. The module takes approximately one hour to complete. Prior to this module being launched, the only online ED learning available in Australia was a 17.5-hour series of 5 modules developed primarily for psychologists. It focuses more on the different cognitive therapy interventions with less emphasis on clinical signs and symptoms and information regarding medical examination and red flags for urgent hospital admission (<https://insideoutinstitute.org.au/resource-library/the-essentials-training-clinicians-in-eating-disorders>).

To date, the RACGP online module has not been evaluated to determine whether it effectively increases the confidence and knowledge of GPs in recognising and treating ED. Furthermore, the effectiveness of online education for health professionals is mixed (Sinclair, Kable and Levett-Jones, 2015; Peterson et al., 2017). Some studies have found a definite improvement in skills after completing online training while other studies report variable improvement or no improvement at all. A systematic review by George et al. (2019) concluded that online educational interventions can be as effective as traditional methods of education such as face to face delivery.

1.2. AIM OF STUDY

The objective of this study is to determine whether a one-hour online learning module

developed to upskill GPs in the recognition and management of ED improves the competence of GP trainees in recognizing and managing patients with a potential ED.

1.3 SIGNIFICANCE OF THIS RESEARCH

This study will shed light on the effectiveness of brief online education in upskilling GP trainees. If the ED module is successful it may also improve the treatment of patients with evolving or established eating disorders in the GP setting by potentially reducing the rates of delayed diagnosis, thus resulting in improved outcomes.

There has been increased recognition of the importance and significant impact of ED on the Australian population as reflected in funding announcements from the Federal and Victorian State Governments since 2010. As of November 1st, 2019, the Federal Health Department in Australia made available a raft of new services to patients with a diagnosed ED, however the diagnosis and appropriate paperwork is to be performed primarily by GPs. There would be value in other primary care providers (e.g. rural and remote nurse practitioners) also accessing this brief online training if it proves effective at building the requisite knowledge and skill to identify patients with an ED.

1.4 OVERVIEW OF THE STUDY

This thesis begins with a background discussion in Chapter 2 exploring the timeline of increasing frequency and magnitude of government funding for programs to better manage ED in the primary care setting. This chapter will also provide a comprehensive literature review regarding the nature and definitions of eating disorders, prevalence on the global and local stage, and the burdens these disorders have on the individual, their carers as well as community. Diagnostic delays and the consequences will be discussed as well as the barriers and enablers that impact on the management of this group of disorders. The adequacy of General Practice in managing ED will be examined with a focus on current resources and training opportunities available in Australia. ED education throughout medical training and as a postgraduate practicing doctor will also be scrutinised.

Chapter 3 describes the discipline of implementation science and an intervention evaluation framework, the Theoretical Domain Framework (TDF), that was developed to inform how interventions can be best designed to achieve the desired behaviour change. The Capability Opportunity Motivation-Behaviour framework derived from the TDF is also described. Evidence available for eLearning having a positive effect on clinician behaviour and thereby improving clinical outcomes for patients will also be explored.

Chapter 4 presents the Research Aims. It draws together key points covered in the preceding chapters and summarises the background literature review. The barriers that have led to delayed diagnosis and inadequate management of ED patients are examined and the rationale behind the study is discussed and the hypothesis and aims are stated.

Chapter 5 describes the quantitative and qualitative methods used in the GPimED study. The design including rationale for recruitment of participants, eligibility criteria, development of the study tools, the measures used, general procedures and statistical methods are presented in detail.

Chapter 6 presents the results of the quantitative and qualitative analysis in 5 sections. The first section details the recruitment process and flow of participants through the study. This is followed by a description of participants demographic and clinical practice characteristics. Section 3 addresses the primary outcome which is the difference between the intervention group and the control group on mean change in total scores on the Key Feature Problem questions from baseline to post-intervention. Section 4 covers the secondary outcome measures and the final section assesses the study against the Theoretical Domains Framework (TDF) where the ED module will be assessed relative to the best practice methods for changing clinician behaviour articulated in the TDF.

Finally, Chapter 7 discusses the results and the implications of the findings, the strengths and limitations of the study and the opportunities for future research.

BACKGROUND

“Don’t judge each day by the harvest that you reap but by the seeds that you plant”

Admiral Guinea, 1884

Robert Louis Stevenson

This chapter is presented in three parts. The first part describes the increasing focus by Australian State and Federal Governments in improving the early diagnosis and management of ED in the community. Part 2 presents a background literature review examining the prevalence and impact of ED. The opportunities for ED specific training within medical courses as well as specialty medical training is also explored. Barriers and enablers to patients accessing timely care will be discussed in part 3. The key role that GPs play in early identification and early intervention will be examined as will the current literature regarding the burden of disease attributable to delayed diagnosis that often occurs.

2.1 EATING DISORDERS AS AN INCREASING AUSTRALIAN GOVERNMENT HEALTH PRIORITY

Since 2010, there has been increasing recognition of the importance and impact of ED on the Australian population. This is reflected in funding announcements from the Federal and Victorian State Governments’ aimed at addressing these very issues. Table 2.1 shows the timeline of funding for ED initiatives since 2010. The first major initiative was the establishment of The National Eating Disorder Collaboration (NEDC) which aims to *“Develop a nationally consistent, evidence-based approach to the prevention and management of eating disorders in Australia”* (<https://www.nedc.com.au/about-us>). The NEDC stated in its Prevention and Early Intervention report (2012, p.75) that one of the identified development

opportunities was: *“Workforce capacity building, roll out and assertively promote online and face to face training opportunities for health professionals in eating disorders recognition, screening, assessment, referral and management”*.

To date, ED research and development of supportive resources have been chronically underfunded. With the formation of the NEDC in 2010, there has been continuous lobbying by both the Butterfly Foundation, which is the peak advocacy organization for ED and current coordinating body for the NEDC, as well as the NEDC itself. This advocacy appears to be finally bearing fruit. A letter published by Murray et al. (2017) highlighted the lack of spending on ED and calculated that the research budget which is funded by the Australian Federal Government per affected individual in Australia is: Eating Disorders \$1.10, Schizophrenia \$67.36 and Autism \$32.62.

In June 2018, the Australian Federal Health Minister Greg Hunt announced a \$3.2 million trial on the Sunshine Coast area in the State of Queensland. This has funded increased Medicare (the Australian Federal Government Universal Healthcare system) rebated psychological sessions for patients diagnosed with an ED. At present under a GP Mental Health Care Plan, Medicare will rebate a maximum of 12 sessions per year for patients diagnosed with a mental health issue. Under this trial, up to fifty sessions have been available for patients with Anorexia Nervosa and up to twenty sessions for other eating disorder patients per year. The trial is a collaboration between the Butterfly Foundation and the Central Queensland, Wide Bay and Sunshine Coast Primary Health Network (PHN). PHNs are Australia-wide Federal Department of Health funded entities that have been created to *“increase the efficiency and effectiveness of medical services for patients”* (<http://www.health.gov.au>).

Furthermore, on 1st November 2019, a major new funding initiative became available to patients across Australia that have been identified by GPs and other specialist medical practitioners as having significant eating disorders. This funding will subsidise patient access to up to 40 psychologists’ visits and up to 20 dieticians visits per year when a comprehensive Eating Disorder Plan is completed. All these initiatives announced by both tiers of Government over the last eight years are tabulated in Table 2.1.

Table 2.1 Timeline of Victorian State and Australian Federal Government initiatives since 2010 regarding Eating Disorders Policy

Year	Government Initiative
2010	National Eating Disorder Collaboration (NEDC) funded by Federal Department of Health
2014	Victorian Government Eating Disorders Strategy developed
2015-16	Assorted Victorian-based projects funded through Victorian State grants. Funding for Eating Disorders Victoria (EDV) to: 1. Develop and deliver face to face seminars aimed at GPs to upskill in early identification of patients (JC involved in development and delivery state-wide) 2. Develop an online module for GP education (JC participant and reviewer) 3. Deliver education to Maternal and Child Health nurses and the Fitness Industry
April 2017	“Food for thought” Victorian Secondary school program education for key school staff in identifying students at risk
May 2017	Federal Health Minister directs Medicare to examine feasibility of increasing the number of Medicare rebatable sessions with a Psychologist for ED patients
Sept 2017	National Agenda for Eating Disorders commissioned by Minister Hunt entailing \$1.3 million to NEDC to upskill workforce and \$1.7 million for Butterfly Foundation’s ED Hope national telephone help line
April 2018	Federal funding for the “InsideOut Institute” national research and clinical Institute (formally CEED-Centre for Excellence in Eating Disorders)
June 2018	Federal funding announced for a \$3.2 million trial on the Sunshine Coast in a collaboration between the local Primary Health Network and the Butterfly Foundation funding increased sessions for ED patients- up to 50 for patients with AN and up to 20 for other ED patients. Increased training for the local GPs.
December 2018	Federal funding announcement that as of November 1 st , 2019, new Medicare item numbers will be available to fund 40 subsidised sessions with a Psychologist and 20 sessions with a Dietician, funded at \$110 million dollars over 4 years

2.2 SETTING THE SCENE FOR GPimED

To fully understand the current situation in General Practice regarding ED, a background literature search was conducted. This included journal articles, online and printed guidelines, and publicly available reports. The databases utilised included MEDLINE, PsycINFO, PubMed, EBSCO and Web of Science. Grey literature was also searched utilising Google, Google Scholar and benchmark ED support websites, thus allowing identification of current clinical resources and publicly available reports and guidelines. Published papers were limited to the English language and date parameters were set to 2000 onwards to ensure comprehensive coverage of relevant recent papers. Several significant earlier works were included as they are considered benchmark papers that have been influential on later research.

The background search included an examination of the prevalence and impact of ED in the community, outlined with reference to the latest figures for Australia. Also reviewed was the research regarding the perceived competencies and barriers of GPs when consulting with patients presenting with symptoms and signs that could be indicative of an underlying subclinical or clinical Eating Disorder. Training opportunities that are available during medical studies and in the post-graduate phase of medical education were also explored.

2.3 EATING DISORDERS-PRODROMAL SYMPTOMS, DEFINITIONS AND DIAGNOSIS

Eating Disorders are a cluster of diagnoses recently re-defined in the Diagnostic and Statistical Manual of Mental Health Disorders-5 (DSM-5) released in May 2013 and shown in Table 2.2 (American Psychiatric Association, 2013). Details about the diagnostic definitions of each disorder is provided in Appendix 1. The Eating Disorder Victoria website summarises the changes as follows *“The DSM-5 includes changes from the previous DSM, which aim to better represent the behaviours and symptoms of people dealing with eating disorders”* (<https://www.eatingdisorders.org.au/>). To do this, there are updated clinical classification categories for eating disorders, and changes to diagnostic criteria. One of the most notable changes is that Binge Eating Disorder (BED) has been acknowledged as a separate diagnosis for the first time. This will help increase awareness of the differences between Binge Eating Disorder and the more common issue of overeating.

Additionally, the category that was known as Eating Disorder Not Otherwise Specified (EDNOS), has been removed. There are two new categories which are expanded upon in Appendix 1: Other Specified Feeding or Eating Disorder (OSFED) and Unspecified Feeding or Eating Disorder (UFED). These new categories are intended to more appropriately recognise and categorise conditions that do not more accurately fit into Anorexia Nervosa, Bulimia Nervosa, BED, or a less severe eating disorder, but simply represent a different constellation of symptoms. Another significant change is the inclusion of some types of 'Feeding Disorders' that were previously listed in other chapters of the DSM, and now listed together with eating and feeding disorders.

Table 2.2 Comparative characteristics of DSM-5 ED diagnostic groups ANZJP 2014

	<i>Anorexia nervosa</i>	<i>Atypical Anorexia nervosa</i>	<i>Bulimia Nervosa</i>	<i>Binge Eating Disorder</i>	<i>Avoidant /restrictive food intake disorder</i>	<i>Purging disorder</i>
<i>Overvaluation of weight and shape</i>	<i>Required</i>	<i>Required</i>	<i>Required</i>	<i>May occur</i>	<i>Not required</i>	<i>May occur</i>
<i>Fear of fatness and/or behaviour preventing weight gain</i>	<i>Required</i>	<i>Required</i>	<i>May occur</i>	<i>Uncommon</i>	<i>No fear of fatness but food is restricted</i>	<i>May occur</i>
<i>Underweight</i>	<i>Required</i>	<i>Not present</i>	<i>NA</i>	<i>NA</i>	<i>May occur</i>	<i>May occur</i>
<i>Unmet nutritional /energy needs</i>	<i>Required</i>	<i>Required</i>	<i>May occur</i>	<i>NA</i>	<i>Required</i>	<i>May occur</i>
<i>Overweight</i>	<i>NA</i>	<i>May occur</i>	<i>May occur</i>	<i>Common but not required</i>	<i>NA</i>	<i>May occur</i>
<i>Regular (weekly) binge eating</i>	<i>May occur</i>	<i>May occur</i>	<i>Required</i>	<i>Required with distress</i>	<i>NA</i>	<i>Absent</i>
<i>Regular (weekly) compensatory behaviours</i>	<i>May occur</i>	<i>May occur</i>	<i>Required</i>	<i>Do not occur</i>	<i>NA</i>	<i>Regular purging, not compensatory</i>
<i>AN not concurrent</i>	<i>NA</i>	<i>NA</i>	<i>Required</i>	<i>Required and no BN</i>	<i>Required and no BN</i>	<i>Not meeting full criteria for AN</i>
<i>Subtypes</i>	<i>Restricting or binge purging</i>	<i>None</i>	<i>None</i>	<i>None</i>	<i>None</i>	<i>NA</i>
<i>Remission specifier</i>	<i>Partial/full</i>	<i>None</i>	<i>Partial/full</i>	<i>Partial/full</i>	<i>In remission</i>	<i>NA</i>
<i>Severity specifier</i>	<i>BMI</i>	<i>None</i>	<i>Frequency of compensatory behaviours</i>	<i>Frequency of binge behaviours</i>	<i>None</i>	<i>None</i>

2.4 PREVALENCE IN AUSTRALIA

Eating Disorders are relatively common, with 9% of Australians experiencing at least one type of ED over their lifetime. Binge eating disorder is the most common form of ED with a lifetime prevalence of 3.5% for females and 2% for males. Bulimia Nervosa affects 2% of females and 0.5% of males over their lifetime while anorexia nervosa affects 1% of females and 0.5% of males (Hay et al., 2014). It is estimated that 4% of the population, or approximately 1,200,000, Australians of all genders, ages, socio-economic and cultural backgrounds, are living with an ED over a 12-month period. This number is of a similar magnitude to the number of asthmatics and diabetics, two conditions that are at the forefront of Australian public health initiatives (<https://www.aihw.gov.au/reports-data/health-conditions-disability-deaths>). The Australian Child and Adolescent Survey of Mental Health and Wellbeing estimated that in 2012–13, 2.4% of young people aged 11–17 reported problem eating behaviours (Lawrence et al., 2015). A greater proportion of females (3.5%) than males (1.4%) reported these behaviours (Lawrence et al., 2015). This could be an under-representation of the true prevalence of EDs in males due to stigma and the illnesses being perceived as something only females suffer meaning accurate figures are often difficult to ascertain (Mond et al., 2014; Eating Disorders Policy Paper writing group, 2016).

Vulnerable Groups

Key vulnerable groups are adolescents, women, athletes, and professions where fitness and weight are paramount for example dancers, jockeys and elite sportsmen. Importantly, women at key transition times in their lives such as pregnancy, post-natal, menopause and bereavement are at higher risk, as are those with a family history of ED (Mitchison & Hay, 2014). The other important group of patients are those seeking assistance for weight loss. Given that the proportion of overweight and obese Australians is on the rise, this population must be kept in consideration as well. Women diagnosed with Polycystic Ovarian Syndrome (PCOS) and diabetics are also at greater risk of developing an ED (Allen, Fursland, Watson, & Byrne, 2011; Mitchell & Bulik, 2006).

2.5 THE BURDEN OF EATING DISORDERS

Morbidity and Mortality

Eating Disorders are complex, serious and potentially fatal. Anorexia Nervosa has the highest mortality rate of any psychiatric illness through a combination of medical sequelae and suicide. Up to 10% may die because of their eating disorder (Steinhausen, 2009; Pompili, Girardi, Tatarelli, Ruberto, & Tatarelli, 2006; Hoek, 2006). The Academy for Eating Disorders AED Report 2011 states that the premature death risk for women with an ED is 6-12 times higher than for age matched peers. There are often years of misery preceding this as the patient grapples with significant levels of impairment of both physical and psychosocial functioning (Arcelus et al., 2011; Butterfly Foundation, 2012; Jenkins, Hoste, Meyer, & Blissett, 2011).

Eating Disorders are associated with significant psychological and physical comorbidities and complications (Mond, Hay, Rodgers, & Owen, 2012). Research conducted by Mathers et al. (1999) in Australia and verified by the work of Simon et al. (2005) in the UK have ED ranked fourth highest burden of disease for 15-24 year olds in terms of life lost through death or disability. The Victorian State Department of Health data of 2012–13 shows that the average hospital stay for someone admitted with an Eating Disorder in Victoria is 13 days (Department of Health, 2013). This contrasts with the average patient hospital stay in Australia, which is 2.9 days (Butterfly Foundation 2012, p. 58).

Financial costs

The financial costs of managing ED concerns not only the medical costs of managing the patients but also the costs of lost productivity of the patient, their families and carers. ED are expensive to treat when compared with other health issues. Inpatient treatment is far more costly than outpatient management and the nature of the illnesses often results in delayed diagnosis and referral thus necessitating inpatient management. Deloitte Access Economics (2015) found that the estimated health expenditure in Australia on children and young people aged 10-24 years living with an ED was \$81.9 million with 42.4% funded by the Federal Health budget and State and Territory Health budgets funding 27.3%, with families bearing the rest of the costs.

A recent systematic review examining 69 studies from across Europe, UK and USA regarding financial costs of ED, showed similar findings in that the economic burden is significant (Sheehan et al., 2016). In the UK the estimated annual healthcare costs per ED patient across all spheres of care was \$113,511.54 (AUD) and in the USA the annual cost was \$117,219.02(AUD).

McCormack et al. (2013) found that in rural Western Australia, the tyranny of distance for rural patients and lack of access to specialist services meant once these patients were eventually seen in a Specialised Eating Disorder Treatment service, they had a much higher incidence of admission for medical rescue than their urban counterparts due to their parlous medical state. German studies by (Stuhldreher et al., 2012; Krauth et al., 2002) demonstrated length and cost of admission for AN to be more than that for schizophrenia.

In Australia, Mather et al. (1997) found that inpatient public and private costs of treating ED were 14 times higher when compared with outpatient management costs. This highlights yet again that delay in diagnosis results in the illness becoming more established with further deterioration of the psychological and physical condition of the patients. This results in increased costs to treat more established illness effectively. Another study by NEDC (2010) put AN as the second most expensive inpatient condition, beaten only by the costs of cardiac bypass surgery in the private hospital sector. Delayed diagnosis also increases the need to refer to specialist clinics and possible admission for medical rescue or intensive inpatient management. This further escalates the medical costs and lost productivity associated with ED. Delayed diagnosis also results in further entrenched behaviours and greater morbidity (Simon et al., 2005).

2.6 DIAGNOSTIC DELAYS AND THE CONSEQUENCES

Research to date has demonstrated that GPs are missing the chance of early intervention for ED. The average delay from commencement of symptoms to treatment is 4 years (NEDC 2012). The delay in diagnosis is despite the finding by Ogg et al. (1997) that in the 5 years preceding an ED diagnosis, patients presented more frequently than demographically matched non-ED patients. Presentations were often related to gastrointestinal issues,

overuse injuries from excessive compulsive exercise, gynaecological problems, lethargy and persistent psychological problems as part of the differential diagnosis. Frequent presentation to primary care as well as other health providers during this time, provide multiple opportunities for early detection and timely treatment. Delayed diagnosis results in chronicity and resistance to treatment that prolongs the misery of the illness and associated adverse effects such as interruption to schooling, work and the burden on family and carers (Gatt et al.,2014).

The latest Bettering the Evaluation and Care of Health (BEACH) study data (Britt and Miller, 2015) demonstrated that many ED patients have psychiatric co-morbidities such as anxiety, depression and post-traumatic stress disorder (Fursland & Watson, 2014). It is also well documented that there is a high incidence of psychological presentations to general practice (Fursland & Watson, 2014). It is possible that these other conditions might overshadow the ED symptoms hence contributing to diagnostic delay.

If treated in a timely fashion, ED patients can have a reasonable outcome. Evidence consistently shows that engagement in treatment within 3 years of symptom development can see outcomes as follows at 5 years: AN 40% recovery, 40% partial recovery, 20% non-recovery and BN 50% recovery (Steinhausen, 2002; Simon et al., 2013; Johnston, Fornai, Cabrini, & Kendrick, 2007).

It appears that there are unacceptably high levels of undiagnosed ED in the primary care setting as well as emergency department settings through missed opportunities (Dooley-Hash, Lipson, Walton, & Cunningham, 2013). A quality systematic review by Trent et al. (2013 p.1) looked at presentations to emergency departments and labelled ED as one of the “*great masqueraders*” of the 21st Century. This description is just as applicable in the GP setting. The Victorian Government Eating Disorder Strategy 2014 identified that there are gaping holes in service provision between the public and private sectors, hospital versus community and inpatient management and poor co-ordination between the various health professionals who could be involved with managing ED patients.

2.7 GENERAL PRACTICE TREATMENT OF EATING DISORDERS : BARRIERS AND ENABLERS

Current research findings universally paint a gloomy picture regarding the capacity of GPs to identify and manage patients with ED early in the illness evolution. This can be due to not only deficiencies on the part of the doctors but also patient characteristics that impact on their willingness to disclose what they are going through.

GP Factors

A UK study (Hugo, Kendrick, Reid & Lacey, 2000) estimated that a GP patient load of 2000 patients can expect on average at least one patient with AN, 20 patients with BED, 20 patients with bulimia and 40 patients with subclinical symptoms at risk of developing a full-blown eating disorder. This paper also looked at referral patterns to a major UK Eating Disorder service and found that the rates of referral varied enormously. Notably there were more appropriate referrals made from practices with UK trained female GPs holding specialist GP qualifications. Other characteristics of practices with greater referral rates were if the practice provided medical student and registrar training and women's health services. Another paper by Flahaven (2006) found that in Ireland, 42% of the GPs surveyed failed to recognise patients presenting with eating disorders, and even when they did identify a patient 55% did not then make appropriate referrals.

The difficulties that GPs experience can be partially attributed to poor mental health literacy. Mental health literacy is defined as *"knowledge and beliefs about mental disorders which aid their recognition, management or prevention"* (Currin, Waller & Schmidt, 2004). This study examined the attitudes and knowledge of Primary Care Physicians in the UK and found that lack of knowledge and inadequate training in ED leads to poor levels of diagnosis and management. These findings are supported by a comprehensive quantitative cross-sectional survey of 614 doctors in training by Banas et al. (2013) in USA. This study found that junior hospital doctors training in Family Medicine (equivalent to GP), psychiatry and paediatrics reported 30% of those surveyed had never diagnosed an ED. When presented with 2 validated clinical vignettes of teenage ED patients, 31% of the Paediatric trainees correctly diagnosed ED but only 2% of the Family Medicine (GP) registrars suspected an ED. Seventy percent of survey respondents reported that they felt ill-equipped to manage ED and that

some form of targeted training in the diagnosis and management of eating disorders should be mandatory. Seventy percent of the Family Medicine residents also stated that they felt they had inadequate training in this field. Lafrance et al. (2013) also had similar findings in a Canadian study examining barriers to medical doctors and psychologists preventing them from satisfactorily treating ED. Given that according to Currin et al. (2009), 50% of mental health services are provided by General Practice, this makes for potentially very grim long-term prognoses for the patients presenting to their GP for help.

The lack of expertise in treating ED is compounded by a lack of well-defined referral pathways and clear admission criteria. Medical stabilisation can occur in acutely unwell patients however appropriate referrals to psychiatric services or adequate follow-up often is not put in place (Trent, Moreira, Colwell & Mehler, 2012). General Practitioners have to search online to find their local expert service providers, many local health services do not have ED expertise or inpatient management units nor do many of the emergency departments have staff adequately trained in ED to properly manage the presentations of ED patients.

In the student researcher's experience, even in the State of Victoria there have been variable admission criteria for those few health services that have an inpatient unit for ED. Furthermore, adult and paediatric admission criteria differ, and these criteria have not been readily accessible to GPs trying to convince a hospital admitting officer that the patient needs admission. Lack of knowledge of admission criteria results in time wastage for GPs who also have the needs of their other patients in the waiting room to be met.

Publication of the Royal Australian New Zealand College of Psychiatry Clinical Guidelines for the management of Eating Disorders released in 2014 has gone some way to address this issue of sharing admission criteria with GPs. These guidelines clearly delineate the criteria for admission that GPs can follow, and emergency departments ought to comply with. Hopefully, this tool will help streamline the referral process if GPs are aware of the guideline's existence.

A further barrier to achieving appropriate care for those with ED is the attitude of their treating health professional. A small qualitative study by Walker & Lloyd (2012) examined the attitudes of 15 mental health practitioners working on the Gold Coast, Australia. An attitudinal survey and focus group was conducted, and the findings describe the process of countertransference wherein the health professional reacts to the frequent recalcitrance of the patient and feelings of frustration, anger, helplessness and self-doubt develop. This can lead to the health professional being less inclined to engage with these patients due to the level of negative feelings they can elicit. The other issue that emerged was the concern or apprehension of having to deal with potentially extremely sick patients who can decompensate quickly both psychiatrically and medically. Hunt and Churchill (2013) in the UK identified similar attitudes in GPs who participated in case-based focus groups. There was also a study completed by a team from University of Melbourne examining medical professionals' perceptions of weight related issues (Cain, Buck, Fuller-Tyszkiewicz & Krug 2017). This study found a reluctance to diagnose comorbid BED and obesity, and that knowledge of physical complications associated with BED was limited, as well as limited knowledge of evidence-based treatment options.

Patient Factors

Patients living with ED are often ashamed and ambivalent about engaging in treatment and are also frequently in denial (Redston, 2014). Their illness is a means of coping with life and to them can be viewed as not a problem at all. Patients presenting for the first-time seeking help are often testing the waters by gauging the attitudes and responses of the GP (Schoen et al., 2012). The GP response to this initial contact is vital if the person is to return and hopefully disclose the underlying issues. If the response is not deemed to be engaging or if the doctor fails to notice possible clues then the opportunity might be lost (Schoen et al., 2012). Many years may pass before the patient seeks helps again (Redston, 2014).

Nondisclosure of symptoms is common among people with ED. Becher et al. (2005) reports that only 31.9% patients spontaneously volunteer eating or weight concerns and only 22.4 % had ever been asked directly about eating patterns or concerns regarding weight. The major point of interest with this paper was the finding that those patients that were directly asked were more likely to disclose their concerns.

General practitioners need to ask the right questions which is so often the case when dealing with other delicate issues that are often be some of the clinical dilemmas GPs face daily. Multiple presentations to the doctor with a range of physical and psychological symptoms are characteristic of patients living with ED (Redston, Ogg & Mond, 2007). The degree of psychological comorbidities is also extremely high so those presenting with depression, anxiety and obsessive-compulsive disorder should also be screened for ED. According to the BEACH study (2014-15), anxiety and depression presentations make up 6.6% of all presentations to General Practice.

Fursland et al. (2014) looked at rates of ED in patients attending a mental health outpatient service and found that following screening, 41% met the criteria for ED. There may well be a large cohort of mental health patients that are already linked with medical services who have never had a risk assessment regarding ED. This raises the question as to how many of these patients are grappling with an ED as well as the presenting mental health issue, but the GP never asked about it even when conducting a Mental Health plan as part of the consultation.

A Norwegian study by Halverson (2014) examined the characteristics of patients and their experiences when interacting with their GPs. One hundred and fourteen participants in a specialist inpatient unit completed a questionnaire about the GP consults where the Eating Disorder was discussed. Of the respondents, 66% had a regular GP that they had seen at least 3 times in the previous 12 months and had discussed the illness and its impact. Seventy-five % were satisfied with their GP's manner but only 47% felt the GP supported them. Looking through the prism of the "glass half full" one could say these are positive findings, however another interpretation is that many GPs, even trusted ones that have an ongoing clinical relationship with their patients, seem to be not providing optimal care to these patients even when the ED has been identified. Further complicating factors are that for male sufferers of ED their gender makes it even more unlikely for the GP to consider ED in the differential diagnosis (Strother, Lemberg, Stanford, & Strother, 2012).

2.8 ROLE OF GENERAL PRACTICE

As GPs frequently have consultations with ED patients, the profession needs to be much more aware and equipped to recognize the early warning signs to make an ED a possible differential diagnosis. If this occurs, then there should be a commensurate improvement to both the quality of life of patients and the health budget (Austin, Ziyadeh, Forman, Keliher, & Jacobs 2011). If GPs can be upskilled to better identify patients at risk with early signs of an ED then it can be postulated that they potentially can make a considerable contribution towards minimising the impact on not only the patients, but also their families and the community. The literature suggests that low rates of detection currently achieved by GPs is not only doing a disservice to patients but also the community. Being equipped to diagnose and triage the severity of the ED and then having access to appropriate referral pathways is key for GPs to provide a better standard of care to the patient with a developing or established ED. The complexity of ED means that the optimal care model is that of a multidisciplinary team comprising the GP, psychologist, either private or part of the local area mental health service, a psychiatrist, paediatrician or physician depending on the age of the patient, dietician and thereafter anyone of social workers, school welfare worker and of course the family (Royal Australian and New Zealand College of Psychiatry, RANZCP Guidelines, 2013).

The complexity of ED treatment options and referral pathways are presented in detail in Appendix 2. This is part of a document created by a collaboration of interested public and private health service providers to map services for ED in the outer eastern suburbs of Melbourne in the State of Victoria, Australia. It is publicly accessible on the “No Wrong Door” website. This is only one example in one health service area of a major Australian city. Many health services have not performed service mapping so health providers have no document to refer to when seeking appropriate assistance. Appendix 3 is another example of Melbourne Metropolitan service mapping determined by the local area Mental Health catchment, but it has much less detail.

Use of screening tools in General Practice

A range of validated screening tools are available to detect mental health issues including ED and are suitable for use in general practice (Britt & Miller, 2015; Mond et al., 2008; Luck et

al., 2002; Solmi, Hatch, Hotopf, Treasure, & Micali, 2015). GPs in Australia use screening tools such as the Kessler 10 (K10) and Depression and Anxiety Score Scale (DASS 21), and Edinburgh Postnatal Depression Scale (EPDS) every day as part of the mental health plans that are performed to allow patients to access Medicare, or Primary Health Network funded sessions with a psychologist. There is also the HEADSS- Home, education, employment, peer group activities, drugs, sexuality and suicide risk assessment tool developed in 1991 by Cohen et al. that is used primarily in assessing adolescents. This was updated in 2004 to include eating and safety hence is now known as HEEADSSS (Goldenring & Rosen, 2004). In terms of ED, the SCOFF is an easy to administer tool that, with training, can be easily incorporated into consultations to increase the identification of those patients at risk of an ED. The SCOFF questionnaire was developed in 1999 by Morgan, Reid & Lacy as a quick and reliable tool that can be administered within a consultation. The SCOFF includes five questions which are shown in Table 2.3. Botella, Sepulveda, Huang & Gambara (2013) performed a meta-analysis of 15 studies examining the diagnostic accuracy of the SCOFF. The extensive analysis concluded that the SCOFF was a highly efficient tool in detecting ED even in several languages and found that it was to be highly recommended as a screening tool.

Table 2.3 SCOFF Screening tool

SCOFF
S – Do you make yourself Sick because you feel uncomfortably full?
C – Do you worry you have lost Control over how much you eat?
O – Have you recently lost more than One stone (6.35 kg) in a 3-month period?
F – Do you believe yourself to be Fat when others say you are too thin?
F – Would you say Food dominates your life?
If the patients answer 'Yes' to 2 or more then there is a high index of suspicion that they have an eating disorder and warrant a more detailed assessment. ²² SCOFF has been validated across various languages. ¹⁹

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Having a tool available is one thing however using it in the clinical setting and convincing doctors to make use of the tool is quite another. Johnston et al.(2007) looked at the feasibility and acceptability of using the SCOFF and found that it could be readily used in a GP setting either administered by the nurse as part of health checks or within the consultation with the GP.

2.9 CURRENT AUSTRALIAN TRAINING OPPORTUNITIES AND GAPS

As of April 2020, specific training in ED for Victorian medical students remains limited. The medical training both at student level as well as junior doctors in training is mixed at best. Much depends on where your medical training is undertaken and the clinical placement opportunities available.

Medical Student Education

Currently the University of Melbourne Doctor of Medicine Graduate Medical degree has several components pertinent to ED diagnosis and management. In the third year of medical training during the Psychiatry rotation some theory is covered, however not all clinical placements have capacity to allow students to be exposed to ED patients either at the outpatients or indeed inpatient units. During the paediatric/child and adolescent rotation in the same clinical year, there may be limited exposure to patients with ED depending on the hospital the students are allocated too. The patients that will be encountered have established illness and the diagnosis is clear. The GP rotations are even less likely to give the opportunity for medical students to take a history and examine such a patient unless the GP supervisor makes the diagnosis (Principles of Clinical Practice 3 MEDS90020- Mental Health and Child and Adolescent Health-Melbourne Medical School). Monash University Medical School in Melbourne was also approached to provide a summary of the training or link to their core curricula concerning ED diagnosis and management but did not respond.

A literature search of studies from other medical schools in Australia revealed one study which looked at fourth year medical students at University of Adelaide (Katsikitis et al.,2002). This lone study examined problem-based learning versus case-based learning covering ED topics. The objective and discussion were focused on analysing the performance of the students when tested for knowledge and skills acquisition and retention plus feedback from students regarding the tutors within the comparison groups. Findings demonstrated no significant difference between the two modes of education.

Doctors in Training

Once working as a junior doctor, the hospital rotations that are undertaken have some potential for exposure to patients with ED. However, unless there are acute medical rescue admissions to the general medical wards from emergency department, or psychiatry rotations with specialist ED units, then again, the exposure is limited.

Comparison with training opportunities for junior hospital doctors in North America and UK

Review of the international literature suggests that a similar paucity of training is the norm for young doctors and Family Medicine trainees abroad (Mahr et al., 2015; Girz, Robinson & Tessier, 2014; Gurney & Halmi, 2001; Hunt & Churchill, 2013). All concur that on both sides of the Atlantic, doctors feel inadequately prepared and equipped to identify and manage patients with ED. Linville et al. (2010; 2012) surveyed medical practitioners in Oregon USA and again found that 68% of respondents did not think to screen for Eating Disorders and 59% felt ill equipped to diagnose and manage such patients. It appears from the literature that Australian medical training is not alone in inadequately preparing GPs for the challenging role of early identification and intervention for ED, and that internationally it is acknowledged that more needs to be done to rectify this situation.

Current available education and resources for Australian GPs and evaluation of existing online training resources

For those young doctors embarking on a career in general practice, the Royal Australian College of General Practitioners (RACGP) has no specific requirements or compulsory mental health modules covering ED. Through the “gpLearning” website, which is the RACGP online learning platform, there is only 1 listed learning opportunity which was launched in July 2016. Evaluation of this RACGP module, The *Recognising Eating Disorders in General Practice* module, is the focus of this study.

Guidelines on RACGP website

On the RACGP website, as of January 2020, are the National Eating Disorder Collaboration Guidelines 2012 plus three articles that have been previously published in Australian Family Physician (AFP), now known as the Australian Journal of General Practice (AJGP) (Yeo & Hughes, 2011; Redston & Castle, 2014; Rowe, 2017). They are available only to members of

the RACGP.

Other available Resources

Health Pathways, which is an online initiative through Primary Health Networks, have also included Eating Disorders in their service mapping in some regions. Eastern Melbourne Primary Health Network (EMPHN) has launched an ED Pathway that GPs can access once they are registered with the PHN. The Victorian Centre of Excellence in Eating Disorders (CEED) website also has excellent resources for GPs including BMI charts and links to assorted documents that detail warning signs and physical risk assessment parameters as well as the validated screening tools currently available to use as part of the assessment process. Furthermore, The Butterfly Foundation, Eating Disorders Victoria (EDV) and National Eating Disorders Collaboration (NEDC) all have online resources for Health Professionals and conduct seminars for doctors and other health professional working with ED patients.

Face to Face training: recently completed projects

Under the Victorian State Government Eating Disorders Strategy of 2014, funding was made available for projects by EDV and CEED to develop and provide face to face training for GPs and allied health practitioners. This funding ceased as of June 30 2016th but both organisations continue to deliver 2-hour presentations around the state at rural and regional sites now in partnership with PHNs.

Further funding was provided by the William Buckland Foundation to Eating Disorders Victoria in 2013 to provide education sessions over a 3-year period. An evaluation was conducted of this 'Back to ED basics-GP and health practitioner eating disorders education program' to determine the actual numbers attending. This program conducted 24 education workshops across Victoria using local GP experts and Area Mental Health representatives. The workshops were RACGP Accredited and were a collaboration with CEED. The 642 attendees included 212 GPs, 142 Nurses, 115 Mental Health Practitioners, 58 Dieticians and 115 others including medical students and pharmacists. In addition, 53 ED general knowledge sessions were conducted during clinic visits across the state also with a total of 378 attendees, with 64% being GPs.

These findings correlate with a study performed in Western Australia (Watson, McCormack, Hoiles, Forbes & Potts 2013) that examined the effect of outreach education to rural health practitioners in rural and remote Western Australia. The outcomes for rural patients are poor relative to their urban counterparts, as access to timely intervention as well as to specialist Psychiatric services is even more problematic than in for those patients living in the city. Surveys conducted post educational activities found that the doctors self-reported improved confidence and capacity in identifying and appropriately referring Eating Disorder patients.

2.10 CURRENT EVALUATION OF EDUCATIONAL ED INTERVENTIONS FOR GPs-

Finding papers that have evaluated training packages for medical practitioners to upskill diagnosis and management of ED have been challenging. McVey, Gusella, Tweed, & Ferrari, (2005) invited 3315 health workers from across the Canadian province of Ontario to participate in both face to face and video education sessions. The practitioners included an array of allied health workers and only 2.8% were GPs. The evaluation comprised self-reported pre and post surveys assessing perceived knowledge and comfort in managing ED cases. No actual testing with clinical cases were conducted.

The New South Wales Centre for Eating Disorders and Dieting (CEDD) recently renamed the “InsideOut Institute” has developed a 17.5-hour 5 module online program for Health professionals titled “*The Essentials*”. It is very comprehensive but may be difficult for GPs to complete given the significant time commitment. Brownlow et al. (2015) published an evaluation of the CEDD online program. Over a six-month period, 187 health professionals were recruited by online advertising in a variety of Health Professional journals. None of the participants were General Practitioners. Pre and post questionnaires were used to examine current levels of knowledge and assessment of skills around diagnosis and management as well as personal attitudes and beliefs regarding ED. Demographic data was collected looking at gender, age, primary professional discipline, length of time in practice, and prior experience in treating ED. Post intervention self-report reviews saw a 96.2% response indicating that participants felt that their clinical practice had improved, with 95.8% indicating that the program met their needs as well as reduced the bias towards patients with Eating Disorders. The issues with this evaluation include that it is self-reported

improvement without any clinical assessment of actual performance rather than just knowledge, and that there were no GP participants. In the discussion this was noted, and the comment made that GPs are a *“difficult subpopulation to engage in learning both due to access to them and considerable professional time constraints”*. The authors stated that they understand that at the time of publishing there were no other online training programs available internationally. The 1-hour module developed with the RACGP has since gone live and will be subject to evaluation as part of this thesis.

2.11 SUMMARY

From the background literature review, issues have been identified regarding the early identification and appropriate management of EDs in GP. It is acknowledged in the literature that ED have the highest mortality rate of all mental health disorders as there can be life threatening physiological disturbances associated with the behaviours as well as the cognitive effects that can reduce impulse control, resulting in suicide.

Evidence points to the rising prevalence of ED in the community and that these patients present more frequently to their GP and emergency departments with distressing psychological and physical symptoms (Eating Disorders Policy Paper writing group, 2016).

Medical students and junior doctors appear to be inadequately prepared to manage these patients and even experienced GPs struggle with the complexity, recalcitrance, and stress of managing such patients and their families who often lurch from crisis to crisis. Much time can be spent trying to put supports in place, finding out where to admit and what the criteria for admission are and then after spending a huge amount of time and effort, the patient disengages and does not follow through.

Despite the morbidity, high mortality, and complexity of dealing with Eating Disorders plus the prevalence in the community, there are limited educational opportunities for medical students and Primary Health Practitioners to prepare for encountering these complex and often very ill patients. GPs need to actively seek out resources from a myriad of sites and organisations. Many are ignorant of simple screening tools that can be utilised with relative ease within a consultation. These tools have been found to help flag at-risk patients and

facilitate possible early intervention. Timely access to user-friendly education tools will facilitate this better outcome for patients.

The need for a concise yet comprehensive and accessible teaching tool is clear to help GPs to better recognize evolving or early ED presentations. This study will examine an educational tool that may perform this role by assessing whether there is improved performance of participants who complete the module by using clinical scenarios pre and post which to date has not been performed in Australia in regard to ED diagnosis and management.

CHANGING CLINICIAN BEHAVIOUR THROUGH EDUCATION - SETTING THE SCENE FOR GPimED

“Things get done only if the data we gather can inform and inspire those in a position to make a difference”

Mike Schmoker 2003

This chapter is in two sections with the first giving an overview of the discipline of Implementation Science which looks at frameworks aimed at improving the translation of theory and guidelines into real world implementation. This has been found to improve outcomes by better achieving behaviour change. This discipline of Implementation Science and one of the intervention evaluation frameworks, the Theoretical Domain Framework (TDF) that was developed to inform how interventions can be best designed to achieve the desired behaviour change will be discussed. The Capability Opportunity Motivation-Behaviour (COM-B) framework derived from the TDF is also described. Later in Chapter 5 the ED module will be assessed further relative to the best practice methods for changing clinician behaviour articulated in the Theoretical Domain Framework. In the second section, evidence available for eLearning having a positive effect on clinician behaviour and thereby improving clinical outcomes for patients will also be explored

3.1 IMPLEMENTATION SCIENCE

The evolution of Implementation Science has its origins back in the 1960s and 1970s in the United States of America. Major national health initiatives under President Kennedy’s *New Frontier* and President Johnson’s *Great Society and War on Poverty* had millions of dollars

spent with little return. These programs required the adoption of new ideas by public health organizations to improve health and reduce the burden of poverty. The failure to see improvement in health outcomes was the catalyst for authorities to investigate whether the policies had been implemented as planned, and to try and identify factors may have acted as a hindrance. This led to the birth of Implementation science (Lobb & Colditz, 2013).

Implementation Science has been defined as *“the scientific study of methods to promote the systematic uptake of evidence-based practice into routine practice, and, hence, to improve the quality and effectiveness of health services”* (Eccles et al., 2006 p.1). In the last decade there has been a myriad of theories developed in this emerging field to achieve behaviour change and many authors have commented on the difficulty and confusion in determining which theory to follow when designing and evaluating an intervention. (Bhattacharyya, Reeves, Garfinkel, & Zwarenstein, 2006; Nilsen, 2015) In 2005, Susan Michie from the University College London Department of Psychology and a group of Psychology expert collaborators from across the UK sought to address this vexing issue which led to the development of the Theoretical Domains Framework. This is the framework chosen for discussion as it was deemed the most appropriate model to measure the module against as we are aiming at changing health professionals behaviour.

Theoretical Domains Framework (TDF) 2005

Michie and colleagues’ initial paper outlined a new framework of behaviour change domains that could be applied to identified problems. The aim of this paper was to study the implementation of evidence-based practice and to develop strategies to better achieve effective implementation through identifying the issues that could be undermining optimum outcomes. It also aimed to be user friendly for researchers in other sectors.

This work had the experts brainstorming to identify psychological theories and theoretical constructs (components of theories) that were relevant to identifying opportunities and means of achieving behaviour change. Table 3.1 explains the glossary developed by further work by Craig et al. (2008). This process identified 33 psychological theories with 128 constructs. A process of prioritisation was undertaken with 17 constructs identified as relevant to interdisciplinary research and in understanding and achieving behaviour change,

while a further 14 were deemed relevant to changing health care professionals' behaviour. Ultimately, the Theoretical Domains Framework (TDF) paper put forward 12 domains covering factors that influence practitioner clinical behaviour based on psychological theories as well as a series of questions developed to improve identification of the problems associated with implementing evidence-based practice.

The 12 domains identified as explaining behaviour change were: 1. knowledge, 2. skills, 3. social/professional role and identity, 4. beliefs about capabilities, 5. beliefs about consequences, 6. motivation and goals, 7. memory, attention and decision processes, 8. environmental context and resources, 9. social influences, 10. emotional regulation, 11. behavioural regulation, and 12. nature of the behaviour.

Table 3.1 Glossary of TDF terms (from Craig, 2008)

Term	Definition
Theory	a system of ideas or statements held as an explanation or account of a group of facts or phenomenon
Framework	a structure composed of parts framed together.
Theoretical construct	a concept specially devised to be part of a theory
Domain	an area of interest: a sphere of thought, action or knowledge
Theoretical domain	a group of related theoretical constructs

Cane et al. (2012) released a paper which finessed and validated the original 12 domains and expanded the number to 14. This reworked framework contains 14 domains and 84 component constructs (the number of component constructs in each domain is defined in brackets): 'Knowledge' (3), 'Skills' (7), 'Social/Professional Role and Identity' (9), 'Beliefs about Capabilities' (8), 'Optimism' (4), 'Beliefs about Consequences' (5), 'Reinforcement' (7), 'Intentions' (3), 'Goals' (6), 'Memory, Attention and Decision Processes' (5), 'Environmental Context and Resources' (6), 'Social Influences' (11), 'Emotions' (7), and 'Behavioural Regulation' (3).

TDF in action The IMPLEMENT Study 2012

Since the TDF has been available to researchers, many studies have used the framework to inform the design and delivery of the intervention in question. One such example is the IMPLEMENT study by French et al. (2012). Four clear steps were identified to help inform the design of the intervention (Table 3.2). These have guided the cohesive framework by which the development, delivery and measurement of outcomes could be made.

The IMPLEMENT study looked to implement an Australian evidence-based clinical guideline for GP management of acute low back pain. The primary target behaviour was to reduce the numbers of plain x-ray films ordered when lumbar spine fracture was a differential diagnosis. The second targeted behaviour change was to increase the incidence of patients with acute low back pain being advised to exercise rather than rest as this reduces pain, stiffness and disability. The IMPLEMENT intervention involved two components including face to face workshops comprising lectures and small group discussion, as well as a DVD that was distributed to the GPs in the intervention group who could not attend. Aspects from the workshops were filmed and used in the DVD.

By designing the intervention and mode of delivery under the umbrella of this four-step process, the desired behaviour changes were clearly identified, as were the barriers and enablers. Techniques to improve uptake of the guidelines were also informed by the TDF framework and clear tools to measure behaviour changes were mapped. The authors' comment regarding the many modes of delivering interventions is true as experienced personally by the variety of Professional Development opportunities available to General Practitioners. That the intervention be tailored to best facilitate uptake by the target audience is especially true for time poor GPs.

Table 3.2 Steps for developing a theory-informed implementation intervention (French 2012)

Step	Tasks
STEP 1: Who needs to do what, differently?	· Identify the evidence-practice gap · Specify the behaviour change needed to reduce the evidence-practice gap · Specify the health professional group whose behaviour needs changing
STEP 2: Using a theoretical framework, which barriers and enablers need to be addressed?	· From the literature, and experience of the development team, select which theory(ies), or theoretical framework(s), are likely to inform the pathways of change · Use the chosen theory(ies), or framework, to identify the pathway(s) of change and the possible barriers and enablers to that pathway · Use qualitative and/or quantitative methods to identify barriers and enablers to behaviour change
STEP 3: Which intervention components (behaviour change techniques and mode(s) of delivery) could overcome the modifiable barriers and enhance the enablers?	· Use the chosen theory, or framework, to identify potential behaviour change techniques to overcome the barriers and enhance the enablers · Identify evidence to inform the selection of potential behaviour change techniques and modes of delivery · Identify what is likely to be feasible, locally relevant, and acceptable and combine identified components into an acceptable intervention that can be delivered

Step	Tasks
STEP 4: How can behaviour change be measured and understood?	· Identify mediators of change to investigate the proposed pathways of change · Select appropriate outcome measures · Determine feasibility of outcomes to be measured

Capability Opportunity Motivation Behaviour (COM-B) 2011

In 2011, Michie, who is at the forefront of Implementation Science research and development, along with an expert group of collaborators postulated another means of framing behaviour change. This approach looked at the background issues that may impact on the determined behaviour and is summarised in the Capability Opportunity Motivation-Behaviour (COM-B) shown in Figure 3.4 below.

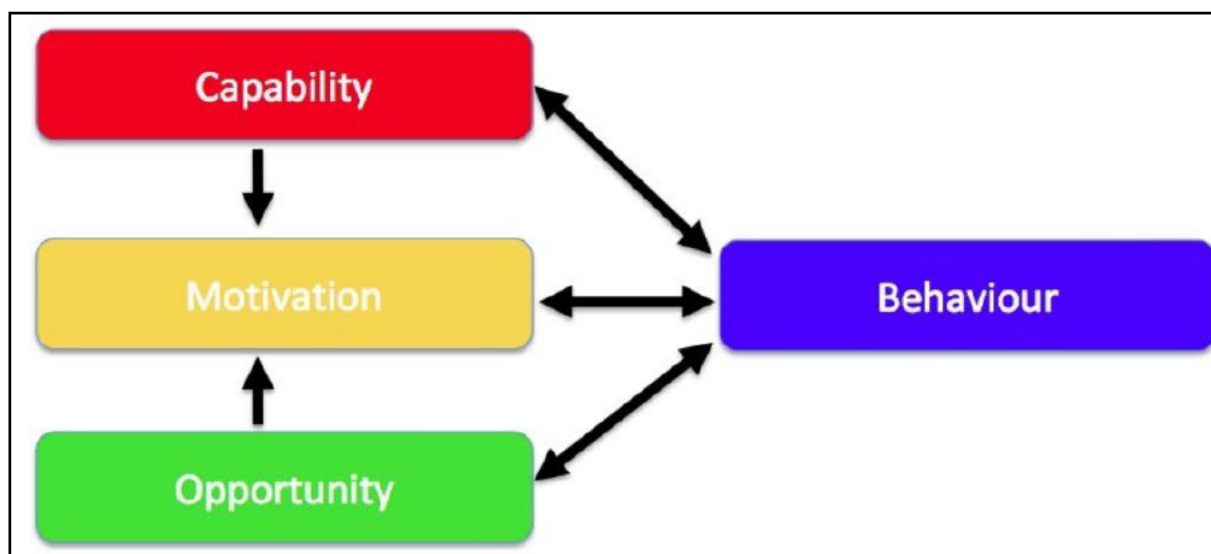


Figure 3.1 The COM-B system - a framework for understanding behaviour. (Michie 2011)

Capability is defined as the person's psychological and physical capacity to undertake the designated activity and encompasses having the requisite knowledge and skills.

Motivation is defined as cerebral processes including both conscious decision making as well as habitual and emotional responses. These direct behaviours daily.

Opportunity is defined as all the factors that lie outside the individual that make the behaviour possible or prompt it.

There is complex interaction between these components but simply having the capacity and opportunity to change behaviour does not make for change unless accompanied by motivation. The COM-B system also maps well onto the TDF Domains as demonstrated in Table 3.3 below.

Table 3.3 Mapping the Behaviour Change Wheel's COM-B to the TDF Domains

DOMAINS		
COM-B component		TDF Domain
Capability	Psychological	Knowledge Skills
		Memory, Attention and Decision Processes Behavioural Regulation
	Physical	Skills
Opportunity	Social	Social influences
	Physical	Environmental context and Resources
Motivation	Reflective	Social/Professional Role and Identity Beliefs about capabilities Optimism Beliefs about consequences Intentions Goals
	Automatic	Social/Professional Role and Identity Optimism Reinforcement Emotion

The Behaviour Change Wheel model was developed by exhaustive examination of nineteen existing frameworks and then created as a means of overcoming their various limitations. This is discussed in great depth in Michie et al. (2011). Figure 3.5 demonstrates graphically the Behaviour change Wheel with the TDF Domains incorporated. The sources of behaviour as

described by the COM-B system is the hub, the TDF Domains are matched in the next layer, then nine interventions next, with the rim of the wheel being seven policy categories that could be actioned by organisations or governments to enable the interventions to proceed successfully. The BCW was used reliably to characterise interventions utilised by the UK Department of Health. A UK tobacco control strategy released in 2010 and the National Institute of Health and Clinical Excellence's guidance on reducing obesity are successful examples of programs developed using this framework.

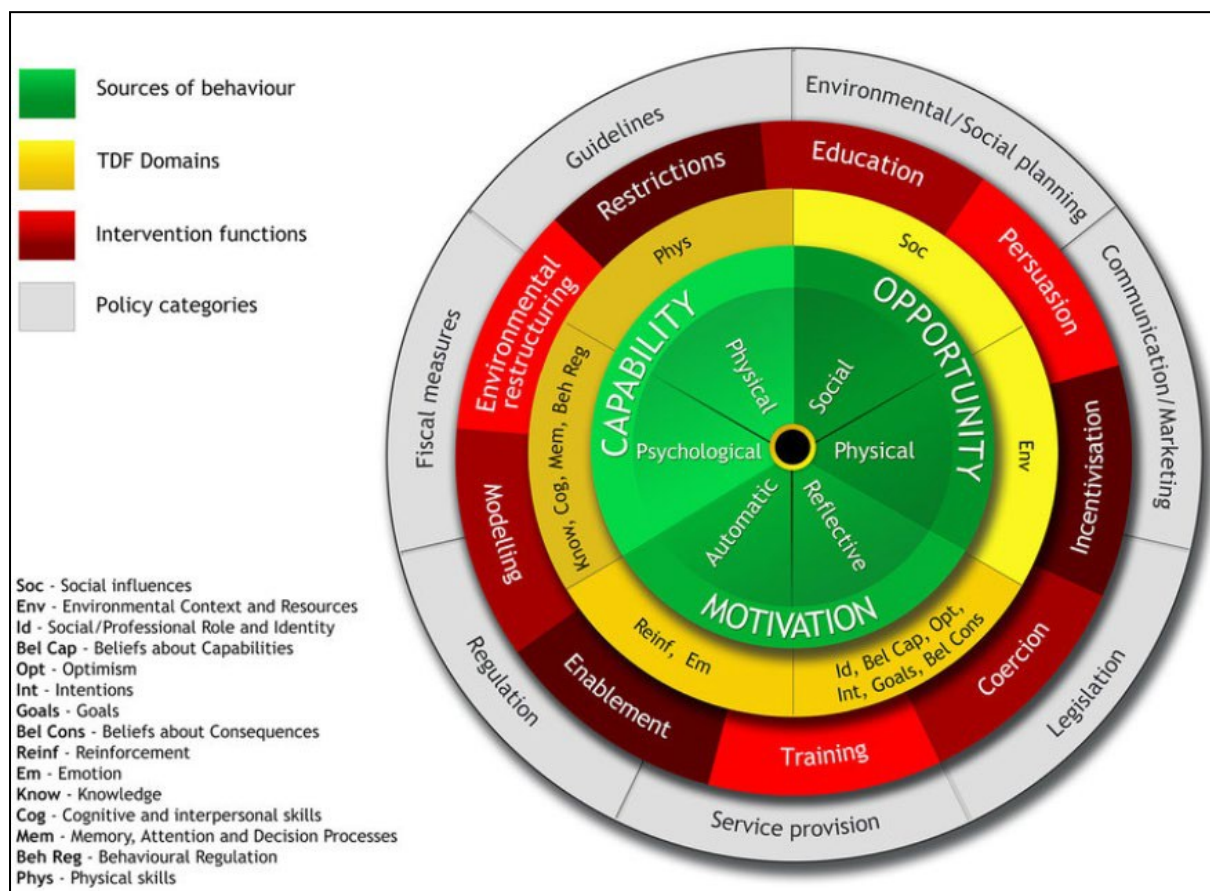


Figure 3.2. The behaviour change wheel: A new method for characterising and designing behaviour change interventions. Michie et al. (2011)

3.2 EVIDENCE REGARDING EFFECTIVENESS OF eLEARNING

Modern methodologies in the digital age are steering medical practitioners increasingly towards eLearning as the preferred mode of professional development and education. eLearning is convenient and can be conducted anywhere there is internet availability at a time of the doctors' choosing. For rural and remote practitioners, it improves access to

educational resources in a range of topics that had often only been available by face to face activities. (George, Zhabenko, Kyaw, Antoniou & Podazski, 2019).

Another significant driver of eLearning is cost. In a country like Australia, where there are often large distances between towns in rural and remote areas, there can be prohibitive costs and time requirements involved in attending and delivering face to face educational activities. In Australia time poor GPs and GPs in training have increasing access to online learning activities, both from the professional membership bodies such as the RACGP in Australia but also various specialist teaching hospitals, for example the Royal Children's Hospital in Melbourne, Australia. Private Australian eLearning companies such as ThinkGP also provide many educational opportunities.

Hence with the convenience of online training for busy GPs now well recognised, research into the ability of this method to bridge the knowledge to action gap (i.e. change clinician behaviour in line with evidence-based practice) with methods from implementation science outlined above are reporting mixed findings. The literature shows that since 2006 there have been several large systematic reviews conducted examining the effectiveness of such online interventions. Hakkennes & Green (2006) conducted such a review of 228 studies looking at what outcomes were used to measure effectiveness of implementation of guidelines. They found the focus was primarily on the clinician's self-reported change of behaviour, with less than a third looking at improvement at the patient level with improved patient health status. Cook et al. (2008) conducted a large meta-analysis of 201 studies that looked at online learning educational outcomes for health professionals including nurses, allied health practitioners, as well as medical learners. Results for knowledge outcomes, skill improvement and learner behaviours and patient effects concluded that the eLearning had positive outcomes compared to no intervention and was comparable to traditional teaching methods.

These findings have been replicated in several other studies, including Sinclair, Kable, & Levett-Jones (2015). This paper states that at the time of publishing, there appears to be mixed improvement with online interventions with the consensus being some intervention is better than none. (Peterson et al., 2017) specifically examined the effectiveness of "*Blood*

safe eLearning”, a program designed to improve knowledge and application of the guidelines for safe use of blood products in different patient populations within outpatient and hospital settings. The findings revealed improved knowledge across all health professionals who had completed the program, which translated to fewer errors and better outcomes for patients.

The most recent systematic review published by George et al. (2019) examined whether there was any consistent effect of online interventions on improving patient outcomes, cost-effectiveness, or practicing medical doctors’ knowledge, skills, attitude, satisfaction, practice or behaviour change. Ninety-three studies were included that compared online interventions including blended learning incorporating face to face teaching, with learning without any digital component. This study found that there was inconsistent evidence for improved outcomes in the online module group for the parameters listed ranging from no measurable improvement to moderate improvement. Twenty-one studies showed higher knowledge scores in the post intervention group but with a qualifying comment that there was a variable range of effect. The conclusions drawn were that online educational interventions can be as effective as traditional methods of education.

In 2016, an extensive integrative review was conducted to identify the important factors that contribute to good design of eLearning modules. After identifying some 11,000 articles, a final 36 papers were dissected with a resulting 72 features being identified from which a framework was then developed covering 6 domains. Refer to figure 3.3 (De Leeuw, Westerman, Nelson, Ket, & Scheele, 2016). It is hoped that further evaluation of eLearning activities that are based on these domains will demonstrate better outcomes for both clinicians and their patients.

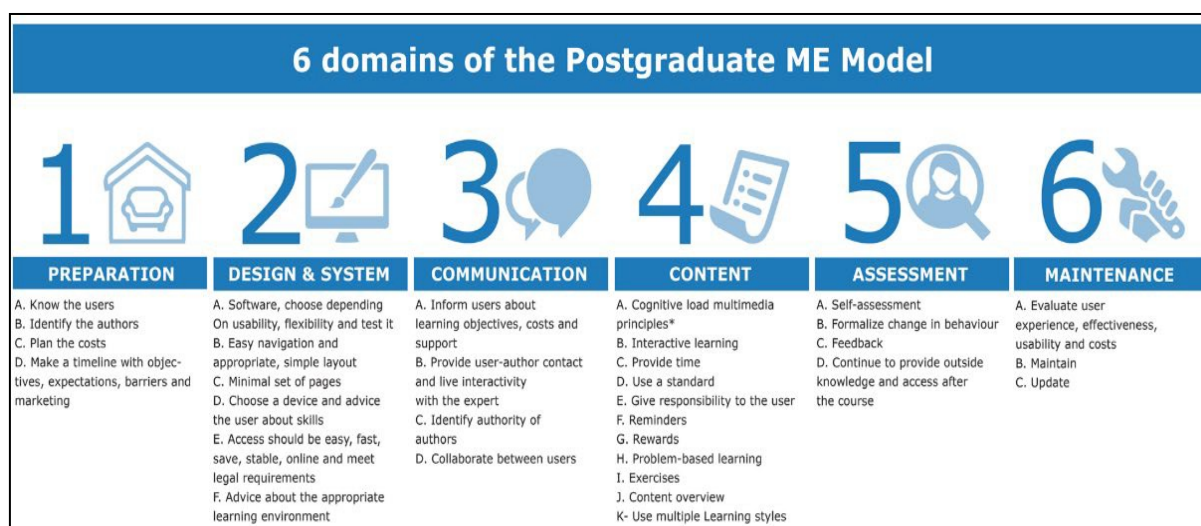


Figure 3.3 Post-graduate Medical eLearning specifications model (from De Leeuw et al., 2016)

3.3 SUMMARY

This chapter has discussed the relatively new discipline of Implementation Science and the attempts to integrate the many theoretical frameworks for changing clinician behaviour into the Theoretical Domains Framework and the Capability Opportunity Motivation-Behaviour framework. The evidence around the effectiveness of online learning in improving clinician knowledge and patient outcomes was also explored. This gives some context so that in Chapter 5 the GPimED Research Design can be examined and analysis of the intervention made, as informed by the Capability Opportunity Motivation-Behaviour Behaviour Change Wheel (COM-B) and the Theoretical Design Framework.

RESEARCH AIMS

“Clarity of vision is the key to achieving your objectives”

Tom Steyer 2019

This chapter describes the aims and hypothesis of the study in four sections. Part 1 will summarise the literature presented in previous chapters identifying the limitations of current training of GPs with regards to ED diagnosis and management. The second part presents the aims of the study which have been developed to address some of the identified limitations, and part 3 presents the study hypothesis. The final section will outline an adjunct to the main study looking at mapping against Implementation Science theory as flagged in Chapter 3.

4.1 BACKGROUND AND RATIONALE

As discussed in Chapter 2, early detection and appropriate management of patients with ED is sub-optimal in general practice. There are many reasons for this occurring, related to both GP factors and patient factors. Chapter 2 discussed how the academic and clinical exposure to patients diagnosed with an ED is quite ad hoc and dependant on which clinical school the medical student attends and the clinical placements thereafter. The literature review also suggested that this is a widespread phenomenon across Australia, UK and North America. Gaps in GPs’ ability to identify EDs early and manage them appropriately has been identified both in Australia and internationally. Overall research to date suggests that patient factors, such as their reluctance to engage because of shame and stigma, as well as clinician factors result in delayed diagnosis and referral for treatment, thus resulting in poorer patient outcomes.

To address the shortfalls in feasible training opportunities in ED for GPs, a one-hour online education module for medical students and Primary Care doctors has been developed. The

module incorporates the latest guidelines from the Royal Australian and New Zealand College of Psychiatry (2014). The module has been available on the Royal Australian College of General Practice eLearning portal since mid-2016 but is yet to be evaluated for its effectiveness in improving clinicians' skills in early identification of ED.

4.2 AIMS

The primary aim is to test whether a one hour online educational module on Eating Disorders increases the likelihood of an appropriate response to a patient with a possible Eating Disorder among General Practitioner Registrars (i.e. GPs in training), compared with a non-ED specific intervention as assessed by the total scores achieved on pre and post intervention testing. GP Registrars were targeted to minimise the range of clinical experience that might skew results.

Secondary aims are to:

- Determine if there was an increase in the use of screening tools such as SCOFF or the HEADSS after completing the module.
- Examine baseline GP Registrar satisfaction with ED training in medical school and during GP training.
- Examine GP Registrars' confidence in dealing with youth health issues and clinical performance.
- Critique the ED module against the Theoretical Domains Framework to understand if it has been designed with key features likely to result in clinician behaviour change and thereby to contextualise the quantitative results of the trial.

4.3 HYPOTHESIS

The primary hypothesis for this study is that completion of the ED training module will improve GP Registrars' detection of ED in written case studies compared to the control group who have not completed the ED-specific training. This hypothesis is based on the expectation that improved knowledge in using screening tools and recognition of red flags in the patient's history and examination will increase GP Registrars' ordering of appropriate investigations and referrals, which will attract higher scores post intervention in the intervention relative to the control group.

METHODS

“Everything should be made as simple as possible, but not simpler”

Albert Einstein

This chapter describes the methods used in the GPimED trial and is presented in four sections. Section 1 includes the study design, inclusion and exclusion criteria, recruitment, and data collection. Section 2 describes the development of the study measures including clinical cases, questions, and scoring. The third section outlines the statistical analysis. The final part of the chapter introduces the theoretical context of the study and discusses the purpose of assessment against the principles of Implementation Science. The study design has been informed by the CONSORT 2010 Statement (Moher et al., 2010) and the SPIRIT Statement (Chan et al., 2013).

5.1 STUDY DESIGN

This study is a randomized, parallel-group study that seeks to compare the efficacy of a one-hour ED online learning module versus a non-ED online learning module in improving GP Registrars’ competency in the diagnosis and management of Eating Disorders. The study comprised three separate surveys: baseline; post-intervention; and final follow-up. All components of the study were conducted via email and online. An online survey platform, SurveyMonkey (SurveyMonkey Inc., San Mateo California), was used to administer the surveys, thus allowing the user to complete surveys via PC, laptop or on their smartphone at any time of their choosing.

Ethics approval for a Minimal Risk Application was obtained from University of Melbourne Human Research Ethics Committee (HREC) reference number 1648419 (Appendix 4).

5.2 PARTICIPANTS

Study participants were Victorian General Practice (GP) Registrars completing their second- or third General Practice placement (GPT2/3). GP registrars are enrolled in the Australian General Practice Training (AGPT) program which leads to examinations for three vocational endpoints recognised by Medicare Australia. These are the Fellowship of the Royal Australian College of General Practitioners (FRACGP), Fellowship in Advanced Rural General Practice (FARGP) or Fellowship of the Australian College of Rural and Remote Medicine (FACRRM). Medicare is the Australian Federal Government Department of Human Services body that manages the publicly funded universal healthcare system. The AGPT program is 3 years of full-time training offered in urban, regional, and rural locations nationally, delivered across 11 training regions in Australia. Registrars undertake a mixture of hospital-based (12 months), special skills (6 months) and 3 community-based GP rotations each of 6 months duration to gain requisite clinical experience according to a curriculum framework. The GP rotations (GPT1-3) are in accredited training General Practices throughout the country which provide clinical experience and mentoring by GP supervisors. The supervisors are fully qualified GPs who have undertaken supervisor training provided by their relevant Regional Training Provider. There are nine training organisations across Australia delivering this vocational training, and currently 1500 new training places each year across the country. Within the state of Victoria there are two consortia providing training: Murray City Country Coast Training Consortium (MCCC); and the Eastern Victorian General Practice Training Consortium (EVGPT).

Expressions of interest for the current study were sought from second and third rotation GP registrars at MCCC and EVGPT. During the recruitment period, 270 registrars were enrolled in either their second rotation (GPT2) or third rotation (GPT3) across the two organisations (Table 5.1). Dissemination of recruitment material commenced on 28/02/18 and registrars who expressed interest in the study were then sent a baseline survey that was completed between 12/03/18 and 21/03/18. After randomisation, participants were sent a link to their allocated learning module between 21/03/18 and 18/04/18. They were given two weeks to complete the module before a follow up survey was distributed six weeks later between 06/05/18 and 04/06/18. The final feedback survey was distributed between 15/05/18 and 27/06/18. Refer to Appendix 5 for details of the survey questionnaires.

Table 5.1 Target recruitment cohort 2019

GP ROTATION	REGIONAL TRAINING PROVIDER		TOTAL
	MCCC	EVGPT	
GPT2	35	26	61
GPT3	124	85	209
Total	159	111	270

Eligibility and exclusion

GP registrars were eligible to participate if they were enrolled in their second or third year of General Practice training in one of the two Victorian training programs. The rationale for excluding registrars in their first and fourth years was to minimise variability in clinical experience among participants. Fully qualified and experienced general practitioners may well have had exposure and knowledge of managing patients with an Eating Disorder whilst first term GPT1 registrars would be still grappling with learning the systems of Australian General Practice. Input from Regional Training Provider Medical Educators at EVGPT (personal communication from Dr. Caroline Johnston and Professor Neil Spike, March 2017) recommended that GP registrars in their first rotation (GPT1) would be too inexperienced and ought to be excluded from this study.

Registrars who had undertaken Psychiatric or Paediatric rotations in units with an Eating Disorder service were also excluded. These registrars would potentially have had teaching and clinical management experience in dealing with ED patients which could skew the results. Although some larger GP teaching practices host more than one trainee concurrently, only one GP Registrar from each practice was eligible to participate in the study, thus preventing the possibility of cluster effects due to potential shared patient cohorts. GP supervisors and other practice staff were not involved in the study (Torgerson, 2001).

5.3 RECRUITMENT

The recruitment process was challenging on two fronts. First, the recruitment material could not highlight to registrars exactly what the module was about as this would have alerted both arms for the baseline study and the control arm for follow-up. The training was advertised as an *“Opportunity to improve early diagnosis capacity regarding serious health disorders”* in the recruitment material. Copies of the recruitment material including flyer, Plain Language Statement and Consent form and ineligibility letter are included in Appendix 6. Participation in the study offered the opportunity to gain valuable clinical knowledge, get examination practice with the mode of assessment, Key Feature Problems that will be further discussed in Chapter 5. There was also the chance to be the winner of a one off prize of \$500 if all components of the study were completed.

Secondly access to the registrars was limited. Due to time limitations and a full program at upcoming registrar workshops, it was not possible to recruit registrars face to face via such a forum. Ultimately the recruitment process differed for the two training organisations. EVGPT indicated they would make flyers available at the training workshops, however they were not willing to directly email registrars with recruitment material. MCCC included the recruitment material in their electronic registrar newsletter and emailed the recruitment material directly to the two cohorts of Registrars with endorsement statements from the MCCC Education Committee. Registrars who were interested in participating could email the researcher via the contact details on the flyer or click the hyperlink in the e-newsletter or email. Respondents were subsequently forwarded the study Plain Language Statement, consent form and a link to the baseline survey. The first question in the survey asked if they had read the PLS and consent form and were still willing to participate to provide consent. There was a time limit of eight weeks for the recruitment.

5.4 SAMPLE SIZE CALCULATION

A sample size calculation was performed by a Biostatistician in the Department of General Practice at the University of Melbourne. The sample size calculation was based on a previous study which found that detection rates of ED in clinical vignettes ranged from 2% in family medicine (GP) trainees up to 31% in paediatric medicine trainees (Banas et al., 2013).

Differences in detection rates among medical social workers following an intervention consisting of four 75 minute training sessions found that knowledge increased by 32.5%, use of ED screening tools increased by 20% and the number of medical social workers specifically asking about ED during consults increased by 33%. Based on this prior study, sample size calculations were performed for baseline detection rates ranging from 2% to 20%, with a post intervention. The results of the calculations are shown in Table 5.2

Table 5.2 Sample Size Calculation

Sample size calculations according to various baseline and outcome effect sizes					
Estimated baseline detection rates	0.02	0.05	0.10	0.15	0.20
Estimated post intervention detection rates	0.22	0.25	0.30	0.35	0.40
Required sample size	100	118	114	166	182

Given the number of GP registrars available in potential sample cohort (n=270) and the likelihood of low response rates along with the predicted low baseline knowledge amongst registrars, we calculated that it was feasible to aim for a sample size of 100, with 50 in each arm.

5.5 RATIONALE FOR METHOD SELECTION

Research into measuring physician quality of care has examined the use of clinical vignettes, record abstraction, and Unannounced Standardized Patients (USP). Glassman et al. (2000) performed an extensive literature search and found that use of USP are the “gold standard in testing physician quality of care and service provision. Findings were similar by Rethans et al. (2007). In the early stages in designing this study, the plan was to use this USP model (detail provided in Appendix 11) as this is considered the most powerful. However, the numbers required based on the sample size calculations rendered the USP model financially non-viable for this study. Record abstraction would also have been logistically and financially non-viable. We therefore chose to examine GPs’ performance using ‘written responses’ to clinical

vignettes which were delivered online. This methodology has been used in previous published studies by Flahaven (2006) and Banas et al. (2013). It was decided that Key Feature Problem cases would be a suitable format as they are widely used evaluation tools in both undergraduate and postgraduate medical exams. They are used as part of the Fellowship examination for the Royal Australian College of General Practice and GP registrars are familiar with the format. The rationale for using this format was twofold. First as these KFPs have rigorous methods for preparation for examination purposes to ensure they are measuring higher order clinical skills, they are an acceptable format for assessing competency where competency is the capacity to perform (Page, Bordage & Allan, 1995). Secondly, it was felt that constructing measures in the KFP style would increase the chances of attracting registrars as they could consider participation as practice for the Fellowship examination process. One KFP style case was developed for the baseline survey and two further KFP cases for the post-intervention survey.

5.6 RANDOMISATION AND BLINDING

Participants were randomised into the intervention group or the control group in a 1:1 ratio upon receipt of the baseline survey via SurveyMonkey. Randomisation was performed by a Biostatistician in the Department of General Practice at the University of Melbourne and the researchers were blinded to participants allocation until all analysis was completed. The links to the allocated module were emailed to participants by a Research Assistant to keep the student researcher and supervisors blinded to participants study arm.

5.7 INTERVENTION

The *Recognising Eating Disorders in General Practice* module (henceforth referred to as the ED module or the module) was developed by the RACGP Education Unit at the behest of a Victorian State Government funded organisation called Eating Disorders Victoria (EDV). It was commissioned by EDV as part of a Victorian Government grant and in response to feedback from GPs who attended a series of face to face workshops presented across Victoria in 2015-16. These workshops were conducted as part of a collaboration between EDV and the

Victorian Centre for Excellence in Eating Disorders (CEED), and Primary Health Networks (PHNs). CEED was established in 2002 to provide clinical consultations, training, resources, and service development, and to build quality and sustainable eating disorder treatment responses within the public specialist mental health service. PHNs are Australian Federal Health Department funded bodies created in 2015 to commission health service provision at a local level. The aims of these workshops were to address the identified gaps in training and to communicate the salient core points to better identify and manage eating disorders in the Primary Care setting using the current best practice guidelines. They were delivered by the student researcher of this study, Dr Jennifer Conway (henceforth referred to as JC), in collaboration with a specialist clinical psychologist (Georgia Graham) from EDV. JC's involvement was to provide a GP perspective and feedback to the EDV clinical psychologist regarding information that was to be included in the face to face presentations, as well as participation as the GP presenter for some of the EDV presentations conducted around the State of Victoria.

The information included in the module was distilled from the power point presentation used at the face to face seminars by Georgia Graham, JC and facilitated by Annette Knopf (EDV Project Lead). The module was formatted and expanded and referenced by the RACGP Education Unit and has been approved for Professional Development points as part of the RACGP Quality Improvement and Continuing Professional Development Program. It is available to all financial members of the RACGP via the College gpLearning online platform (2016). JC's involvement in the module development entailed being one of seven expert reviewers that gave feedback to the RACGP module writer during the draft phases, plus being videoed for several sections of the module pertaining to "How are eating disorders best managed?", "Communicating with patients who may or may not have an eating disorder", and "Communicating with patients who don't want to talk". Appendix 7 details the RACGP process for developing online learning education modules.

Content of intervention arm module

The ED module has 7 sections that are accessed sequentially. These are described in more detail below. The module comprises 56 interactive screens and is designed to determine the participant's baseline knowledge and understanding of eating disorders, and then to provide feedback including evidence-based answers via pop-up screens after answers are entered.

Section 1. Identifying eating disorders in general practice discusses the role of GPs in the early detection of eating disorders and why there is a need for timely and appropriate referrals (Figure 5.1). It then delineates the key learning outcomes. Disordered eating and eating disorders are defined using the Diagnostic and Statistical Manual Edition-5 (DSM-5), and the bio-psycho-social contributing factors of ED are examined in detail.

Section 2. Consequences of eating disorders are covered comprehensively including the possible long term psychological and physical sequelae of ED across all organ systems.

Section 3. The presenting signs and symptoms component describe how patients with an ED can present in a myriad of ways and that the treating doctor must be aware of the possible various presenting complaints. It identifies the red flag warning signs both on history and physical examination and emphasises the need for a high index of suspicion (Figure 5.2).

Section 4. Discussion of various validated screening tools are covered (Figure 5.3), with examples of how to use the SCOFF tool. The SCOFF was examined in detail in Chapter 2. The HEADDSS tool has been designed for use with adolescents in particular.

Section 5. Management of eating disorders, including tips for engaging and communicating with patients with a possible eating disorder, is discussed (Figure 5.4). There is emphasis on the need for a multidisciplinary team approach and the recommended team members (Figure 5.5).

Section 6. This section has three case studies exemplifying different patient groups including a teenage girl with anorexia nervosa (Figure 5.6), a young male with bulimia and a middle-aged woman with binge eating disorder. There are also videos demonstrating helpful techniques to deal with such scenarios. There are opportunities for the participant to demonstrate their existing knowledge followed by immediate feedback on their answers and elaboration on the facts pertinent to that screen.

Section 7. The final summary section reinforces key points and provides downloadable resource material. It also allows the participant to give feedback as to whether learning outcomes have been met.

The following images are screen shots from the “Recognising Eating Disorders in General Practice” module under discussion.

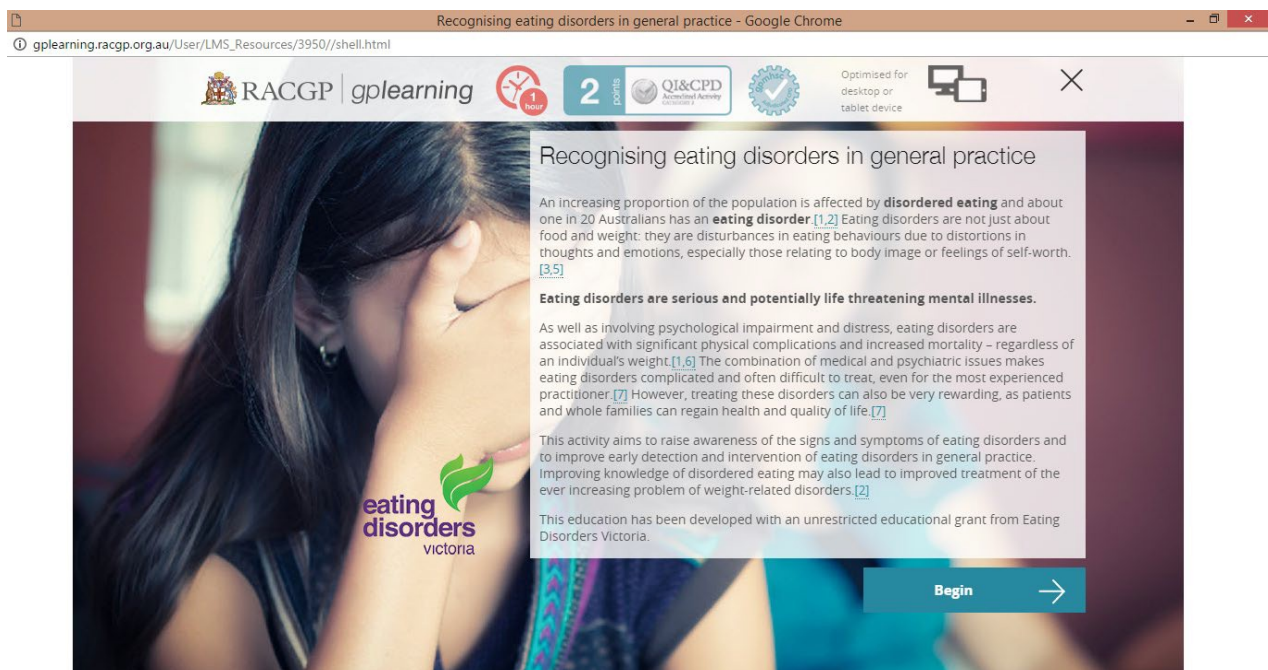


Figure 5.1 Title screen of “Recognising eating disorders in general practice” online module

Recognising eating disorders in general practice - Google Chrome

Not secure | gplearning.racgp.org.au/User/LMS_Resources/3950//shell.html

MENU RACGP | gplearning Recognising eating disorders in general practice

What are the presenting signs and symptoms? - feedback

Patients with eating disorders may present with some or many of the following physical signs and symptoms [1-3] However, an eating disorder may also occur **without any** obvious physical signs or symptoms [1]

GENERAL	>
ORAL and DENTAL	✓
CARDIORESPIRATORY	✓
DERMATOLOGIC	✓
GASTROINTESTINAL	✓
ENDOCRINE and REPRODUCTIVE	✓
NEUROPSYCHIATRIC	✓

GENERAL

- marked weight loss, gain or fluctuations
- weight loss, weight maintenance or failure to gain expected weight in a child and adolescent who is still growing and developing
- cold intolerance
- hypothermia
- weakness
- fatigue or lethargy
- dizziness
- syncope
- hot flushes, sweating episodes
- insomnia
- injuries due to overexercise

Figure 5.2 Example how information is presented to the learner regarding signs and symptoms of ED

Recognising eating disorders in general practice - Google Chrome

Not secure | gplearning.racgp.org.au/User/LMS_Resources/3950//shell.html

MENU RACGP | gplearning Recognising eating disorders in general practice

Screening - feedback

Eating disorder screening tools commonly used include:

- SCOFF
- Eating Disorder Screen for Primary Care (ESP)
- Eating Attitudes Test (EAT)
- Eating Disorder Diagnostic Scale (EDDS)
- Eating Disorder Examination Questionnaire (EDE-Q)

You may not use a particular screening tool at all. The National Institute for Health and Care Excellence (NICE) guidelines for eating disorders state: 'The most effective screening device probably remains the health professional thinking about the possibility of an eating disorder' [6]

One study [2] found that the best individual screening questions are:

- Does your weight affect the way you feel about yourself?
- Are you satisfied with your eating patterns?



Figure 5.3 Example of the commonly used screening tools with focus on SCOFF

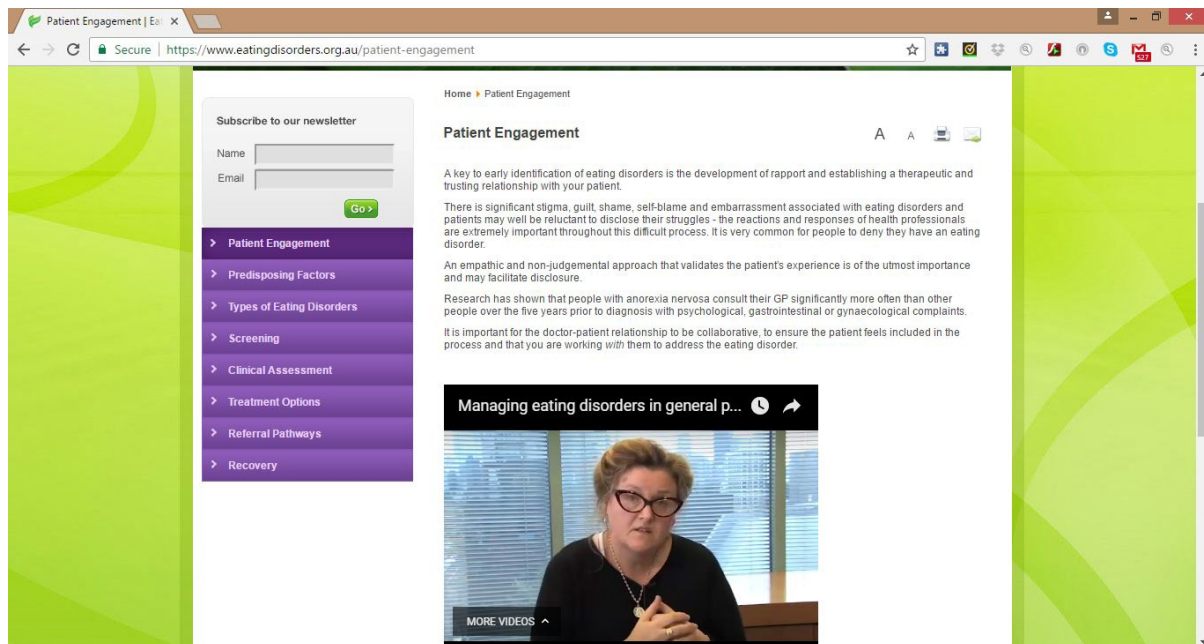


Figure 5.4 ED module Screen with video- link of JC discussing consult tips to engage the ED patient

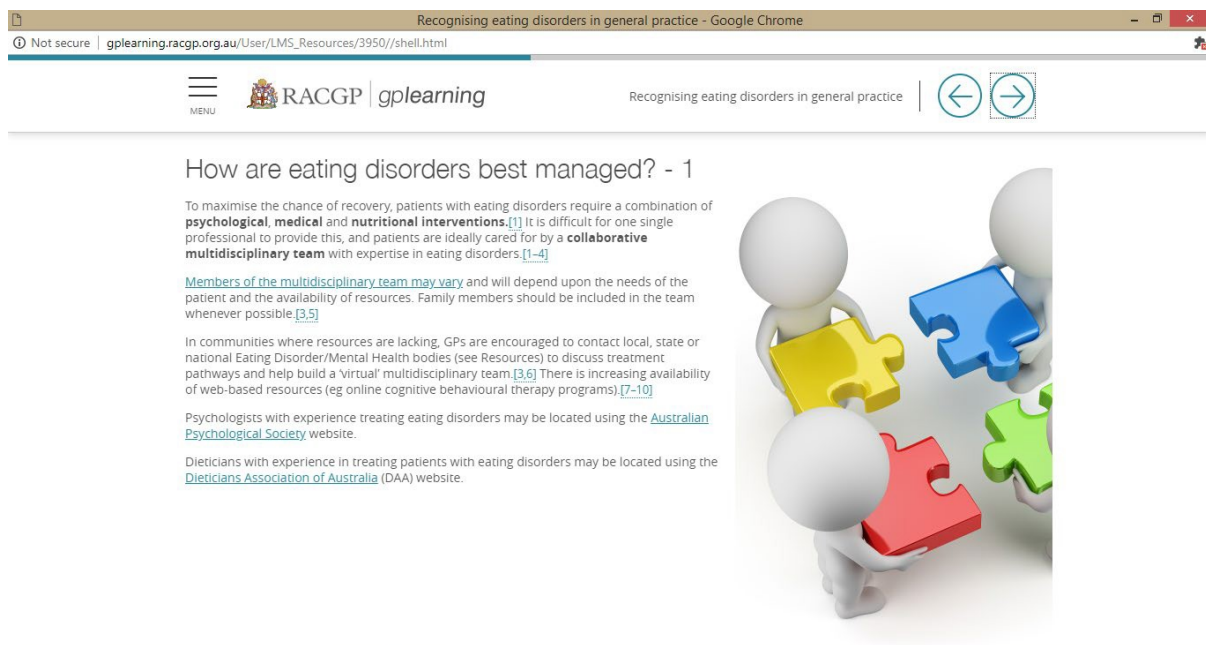


Figure 5.5 Example of management strategies

Recognising eating disorders in general practice - Google Chrome

Not secure | gplearning.racgp.org.au/User/LMS_Resources/3950//shell.html

MENU RACGP gplearning Recognising eating disorders in general practice

Management for Phoebe

What would you consider to be appropriate interventions for Phoebe?

- ☐ A Educate her on a healthy diet
- ☐ B Use a wait and see approach
- ☐ C Admit her to hospital
- ☐ D Family-based treatment
- ☐ E Seeing her regularly for medical and mental health monitoring
- ☐ F Antidepressant medication
- ☐ G A self-help book or website on anorexia
- ☒ H Referral to an Eating Disorders Unit/psychiatrist

Correct. Answers A, D, E, G and H are all correct.

Submit

Feedback continued on next page.



Screenshot Added
A screenshot was added to your Dropbox.

Figure 5.6 Example of one of the case studies Phoebe 14 years old

5.8 COMPARATOR ARM

Participants in the comparator arm completed a one-hour online educational module focused on youth mental health. The module, called *Engaging and assessing young people*, is also available on the RACGP learning platform gpLearning. The module is interactive and comprises eight sections as described below, including three clinical cases covering different groups. It was developed by Headspace and is part of a 6-module course for General Practitioners wanting to upskill in Adolescent Medicine. The module was used with permission from Headspace (personal correspondence Villella, C., September 2017). The decision to have an active control arm was made to ensure all participating Registrars would receive useful information from the modules they completed. It was hoped that this would encourage Training Providers to consent to be part of the study.

Content of Comparator arm module

Section 1. The first section of the Headspace module provides an overview of the mental health of young people aged 12-25 years (Figure 5.7).

Section 2. The role of the GP in early detection of possible mental health issues is discussed in the next section, with reference to the context of also often being the family GP and the problems that can arise from that (Figure 5.8).

Section 3. This section explores characteristics of a youth friendly practice and has the learner reflect on their current practice and what changes could be implemented to make their practice more youth friendly.

Section 4. The fourth section delves more deeply into how to engage with young people and what barriers may prevent them from visiting a GP. This section also raises the importance of confidentiality and the concept of the 'mature minor'.

Section 5. Presents an exploration of how to conduct a mental health consult and perform a GP Mental Health Care Plan which enables access to Medicare subsidised sessions with a psychologist.

Section 6. The sixth section provides information on how to perform a psychosocial assessment using the HEEADSSS screening tool (Cohen, Mackenzie, & Yates, 1991). There is mention of asking about eating but it is not the focus.

Section 7. How to best engage in a culturally appropriate manner with Aboriginal and Torres Strait Islander young people is covered in this section by reiterating the general principals of engagement and providing links to Aboriginal and Torres Strait Islander (ATSI) specific youth resources.

Section 8. The final section specifically explores engaging with LGBTIQ youth and examines engagement techniques and supplies links to resources both for the learner and for patients (Figure 5.9). A summary of the module is then provided (Figure 5.10).

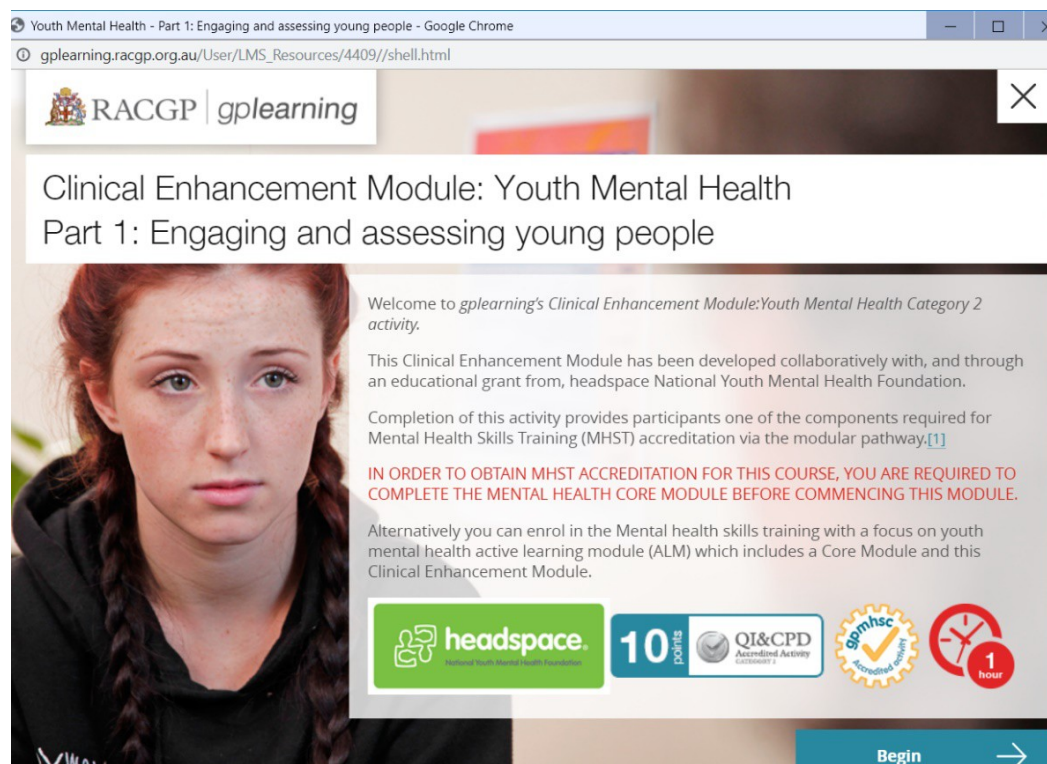


Figure 5.7 Screenshot of front screen of Headspace module used in comparator arm

Youth Mental Health - Part 1: Engaging and assessing young people - Google Chrome

gplearning.racgp.org.au/User/LMS_Resources/4409//shell.html

MENU RACGP | gplearning Youth Mental Health - Part 1: Engaging and assessing young people

Role of the GP in mental health of young people – 1

In which of the following areas of youth mental health should GPs play a role? More than one answer may be correct. Feedback will be provided on the next screen.

- ☐ A Early detection
- ☐ B Providing access to treatment
- ☐ C Mobilising support networks
- ☐ D Monitoring
- ☐ E Referring to the specialist mental health system
- ☐ F Facilitating conversations between the young person and their family over what is 'normal' and what is of greater concern

Submit



Figure 5.8 Screen assessing attitudes to GPs role in youth mental health

Youth Mental Health - Part 1: Engaging and assessing young people - Google Chrome

gplearning.racgp.org.au/User/LMS_Resources/4409//shell.html

MENU RACGP | gplearning Youth Mental Health - Part 1: Engaging and assessing young people

LGBTIQ young people

In the 2011 second national survey of the health and wellbeing of LGBTIQ Australians it was found that:^[1]

- 25% of participants reported experiencing verbal abuse related to their sexuality^[1]
- 16–24 year-olds were more likely than any other age group to report hiding their sexuality or gender identity^[1]
- 35% of 16–24 year-olds usually or occasionally hide their sexuality or gender identity at home^[1]
- 18.5% of LGBTIQ people with regular GPs reported that their GP did not know their sexuality while 12.8% said they didn't know if their GP knew their sexuality^[1]

LGBTIQ people may delay seeking treatment in the expectation that they will be subject to discrimination or receive reduced quality of care. They are more likely to be under-screened for a number of common health conditions than the population at large, and also risk presenting later in disease progression with the potential for reduced treatment and health outcomes.^[1]



Figure 5.9 Example of pages from section on LGBTIQ youth mental health

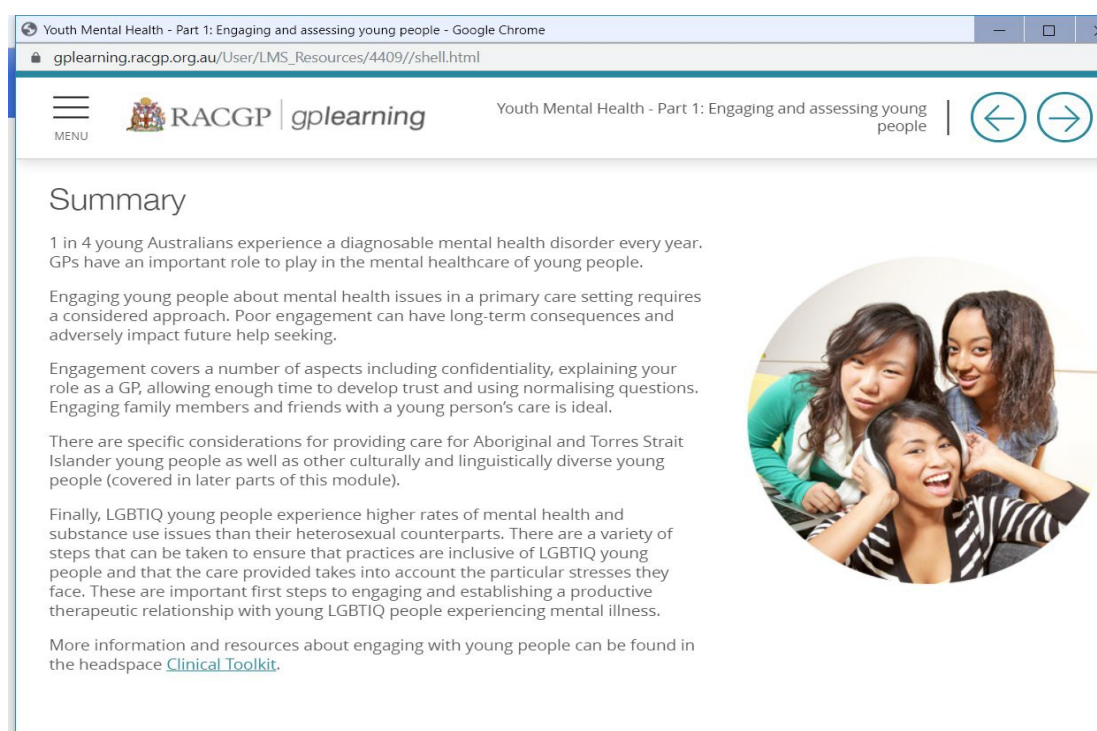


Figure 5.10 Summary page from Headspace module

5.9 SURVEY PILOT

Two pilot surveys were developed to refine the method of data collection and verify usability of the email links and reminder system. Piloting of the baseline survey, post-intervention clinical cases and questions plus overall follow-up surveys was conducted with four University of Melbourne Department of General Practice Honorary Academics. Minor adjustments were made based on their feedback.

5.10 MEASURES

Three GPimED surveys were developed for the main study. They included: 1) a baseline survey collecting demographics and assessing competency in diagnosing a possible ED; 2) a post-intervention survey with clinical cases and assessments to determine if any improvement was made after module completion and 3) a final follow-up survey to get feedback about usability of the module and whether there was subjective perceived improvement in management of ED (Appendix 5).

Primary outcome measure

The primary outcome was the difference between the intervention group and the control group on mean change in total scores on Key Feature Problem (KFP) questions from baseline to post-intervention.

The baseline survey with KFP style case was developed by JC as per KFP guidelines (RACGP Education: Examinations guide 2018). The design followed KFP case format from “The General Practice Exam Book” published by the General Practice Registrars Association (GPRA) in 2015. This case incorporated numerous well documented signs and symptoms to indicate possible ED as a differential diagnosis. The case was based on an actual patient managed by JC in her clinical practice with additional information added from the ED Module list of concerning behaviours and signs. Questions were framed to determine the Registrars’ level of competency in identifying and appropriately managing a patient with a potential eating disorder, with focus on using some or all components of screening tools such as HEADDs and SCOFF.

Of the two post-intervention survey KFP cases, one was developed by JC following the KFP guidelines and again was designed to have an ED as a differential diagnosis, while the other focused on sexual health and the concept of the mature minor. This case was used with permission from the GP Registrars Association (personal communication GPRA, March 22nd, 2017) and taken from their exam preparation textbook. There were 14 questions like those used in the baseline survey in order to determine whether there were any changes in the total scores reflecting improvement regarding history, examination, investigations, use of screening tools and appropriate referrals. The same scoring criteria were applied as for the baseline case and as outlined below.

Knowledge at baseline and post-intervention regarding eating disorder diagnosis, management and appropriate referral was assessed using the KFP scoring system. Answers must be specific and list single diagnoses or investigations; for example, electrolytes and liver function test count as separate answers and cannot be counted as a score of two and linked together. Appendix 8 details the cases and scoring criteria. Answers were assessed against criteria listed below.

The total score was calculated using scores generated with the use of the HEEADSSS and SCOFF screening tools either in their entirety or separate components. One point was allocated for answers that considered best practice across all parameters as per the RANZCP Clinical practice guidelines for the management of Eating Disorders (2014). The SCOFF has six components with score ranged from 0-6, HEEADSSS score range 0-10 and the total score was a maximum of 45.

Questions specifically assessing the clinical scenarios presented as clinical case studies looking at history, examination, investigations, and referrals listed in accordance to the RANZCP guidelines (2014) red flags for eating disorders were included. The answers indicated capacity to identify patients with a possible eating disorder by appropriate diagnosis, management and referrals.

Secondary outcome measures:

There were three secondary outcome measures:

- Improved knowledge regarding eating disorder screening tools as evidenced by improved scoring with the SCOFF in the baseline and post-intervention survey clinical case responses.
- Satisfaction with training in ED at medical student and postgraduate level. Satisfaction was measured by 2 questions in the baseline survey. Response options for each question were on a 5-point Likert scale ranging from “very unsatisfied/unconfident” (1 point) to “very satisfied/confident” (5 points), with midpoint being “equivocal” (3 points).
- Confidence in dealing with youth mental health issues was calculated from survey responses to two questions in the baseline survey. Subjective questions regarding confidence and competencies in managing serious youth health issues were scored using 5-point Likert scales ranging from “very unsatisfied/unconfident” (1 point) to “very satisfied/confident” (5 points), with midpoint being “equivocal” (3 points).

Other measures

Demographic measures

The participants completed a baseline survey with 27 questions. Four questions examined demographics including gender, age, languages spoken, and whether they had children. Thirteen questions were also included regarding training and practice information, for example, stage of training, where their Medical degree was attained, what hospital rotations have been completed, type of practice they are working in (rural vs metro, bulk billing, mixed billing, private, after hours), and number of patients seen (per hour and per week).

uMARS: User version of Mobile App Rating Scale (MARS)

It was determined that GPimED study should include feedback on the acceptability and useability of the ED module. The final follow up survey was in the form of uMARS-the user version of the Mobile App rating scale. These scales were developed to evaluate the acceptance and design of mobile health apps which have proliferated in the last few years. Work published by Stoyanov et al. in two separate papers discussing the MARS Mobile App Rating Scale (2015) and the uMARS - a User version of the MARS (2016) addressed this. Although these scales were designed for evaluation of mobile apps, it was deemed appropriate to apply them to the module which is accessible on all smart devices. The GPimED follow-up surveys were conducted either by phone or email as preferred by the participants and were framed in the uMARS format.

The uMARS style framing of the follow-up survey was as follows in Table 5.3:

Table 5.3 Questions for final survey-feedback regrading acceptance and usability of ED module

Objective	
Engagement	What motivated you to volunteer to be a participant? What were you hoping to get from participating in the trial?
Functionality	Did you find the module easy to use e.g. navigation, interactivity? If not, why not?
Aesthetics	How did you find the lay out of the graphics and visual appeal? Were there any aspects of the module that you found difficult to use or off putting?
Information	Were you happy with the credibility of the source of the information? After completing the module, do you feel it has changed your approach to practice?
Subjective	Would you recommend the module to your colleagues?

5.11 PROCEDURES

Baseline surveys were emailed to those respondents who had expressed interest after study recruitment material was disseminated as previously outlined. Upon return they were then allocated to either the intervention or control arm.

The Intervention group completed the Eating Disorder module whilst the Control group completed the Headspace general adolescent mental health module prior to the clinical cases being sent out. Control arm participants were told how to access the ED module after data analysis was completed for their professional development and education.

Six weeks after intervention completion a post-intervention survey was sent to all participating GP Registrars. This comprised 15 questions relating to 2 clinical cases aiming to assess capacity to identify and appropriately manage scenarios where ED is a possible differential diagnosis.

Reminders

One reminder email was sent to each participant two weeks after the initial expressions of interest and then on a fortnightly basis until the baseline surveys modules and follow-up surveys were completed and returned. A maximum of four reminders were sent at each stage. The data was collected over the interval of March 12 to June 30, 2018, with a time limit of 16 weeks from recruitment to completion.

Data collection

All data was collected via SurveyMonkey and numerical data was logged on an Excel spreadsheet. As emailed responses of expressions of interest were received, they were date stamped and allocated a de-identified ID comprising a three-digit number e.g., 001, 002. The baseline survey link to SurveyMonkey was then emailed and again on notification of completion, was date stamped and another label allocated as well as “strata group” label indicating the Training provider and term e.g., M2 or M3.

Reminders were sent following the predetermined schedule as previously discussed and follow up responses were all entered on the Excel spreadsheet to track timing of reminders and which participants were completing the various stages of the study. Various sections of the data entry were completed by a research assistant then crosschecked for accuracy by JC. Responses were collated, coded, and then tabulated in Excel with missing responses noted and coded also. Follow-up surveys were sent out to those respondents who had previously indicated they would be willing to provide feedback at the end of the trial.

Statistical Analysis

Despite the challenges with sample size, statistical analysis was completed as planned and this addressed further in the results chapter. All analyses were performed using STATA 15 (Stata Corp, STATA Statistical software 2017, College Station, Texas 77845 USA). Variables were described using counts, frequencies, means, standard deviations and 95% confidence intervals. Mean changes in scores across all variables at baseline and 6 weeks post-intervention were estimated using paired t-tests. I acknowledge that given the low numbers, a non-parametric test might have been more appropriate such as the Wilcoxon Signed Rank

Test on reflection however with such low numbers we could not draw inferences as there were too few participants.

5.12 ED MODULE STUDY DESIGN IN CONTEXT OF IMPLEMENTATION SCIENCE

To better understand the likelihood that the module would be effective in changing practice and to assist interpretation of the results, a theoretical critique of the design of the ED module was conducted and will be discussed in Chapter 6 as part of the qualitative analysis. The design of the ED module was examined to determine if it adheres to the principles of Implementation Science in the Theoretical Domains Framework (Cane et al., 2012). The development of an implementation intervention is ideally done from the initial proposal and subsequent evolution of the project, however in this instance the intervention was already operating on the gpLearning eLearning platform, so the mapping was done retrospectively.

As discussed in Chapter 3, Implementation Science is a discipline developed to provide a framework for increasing uptake of interventions designed to improve clinical practice. This is achieved by identifying the core activities that may help the target group more readily utilise these interventions. Identifying barriers and ways to overcome them as well as identifying enablers also facilitates better uptake and application of the intervention resulting in improved outcomes.

The GPimED study and Eating Disorder module can also be viewed through the lens of Quality Improvement. This is defined by Batalden & Davidoff (2007, p.2) relative to healthcare, as being all stakeholders within the health care sector needing to “*make changes that will lead to better patient outcomes (health), better system performance (care) and better professional development(learning)*”. In the context of ED, a problem was identified, i.e. under-diagnosis and delayed intervention in patients with Eating Disorders presenting to General Practice. This led to the development of the education module specifically designed as a succinct tool to upskill GPs in these matters, thus improving long term outcomes for patients as found in many other studies (Gatt et al., 2014).

RESULTS

“Seek pleasure in work itself as in result you have no control”

8 Course Meal for The Soul

Pravin Agarwal, 2017

This chapter presents the results of the study in accordance with the CONSORT statement (Moher et al., 2010) and is presented in 5 sections. The first part describes the recruitment process and participant flow through the trial. Following this, GP Registrar socio-demographic details and clinical practice characteristics are examined and the differences between those that completed all parts of the trial and those who did not are considered. The next section addresses the primary outcome and details the baseline and post intervention scores with statistical analyses looking at changes in total scores. The fourth section examines the secondary measures, including analysis of participant’s satisfaction with undergraduate and post graduate training in youth health issues and their confidence in dealing with youth health issues as well as the use of screening tools. The final section assesses the GPimED Study against an Implementation Science theoretical framework.

6.1 PARTICIPANTS

Figure 6.1 shows the flow of participants through the study. Over the 8-week recruitment period, a total of 15 Registrars from MCCC expressed interest in the study and completed the baseline survey. There were no expressions of interest from EVGPT Registrars. All respondents who completed the baseline survey met the study’s inclusion criteria and were emailed a link to their allocated module. Eleven of the 15 (73.3%) participants notified the researcher by email that they had completed the module. The remaining participants (4/15; 26.7%) failed to notify completion of the allocated module in the prescribed time despite

reminders being sent. In total, 8 of the 11 (72.8%) participants who indicated they completed the module returned the post-intervention survey. Only one participant from each trial arm completed the feedback survey 2/8 (25%). Unblinding, following completion of the data analysis, revealed that 3 of the 8 (37.5%) participants were in the comparator group and 5 of the 8 (62.5%) were in the intervention group. Because the sample was very small, performing inferential statistics on the data would not really be appropriate and any significance levels would have little meaning. Accordingly, the data analysis was largely descriptive.

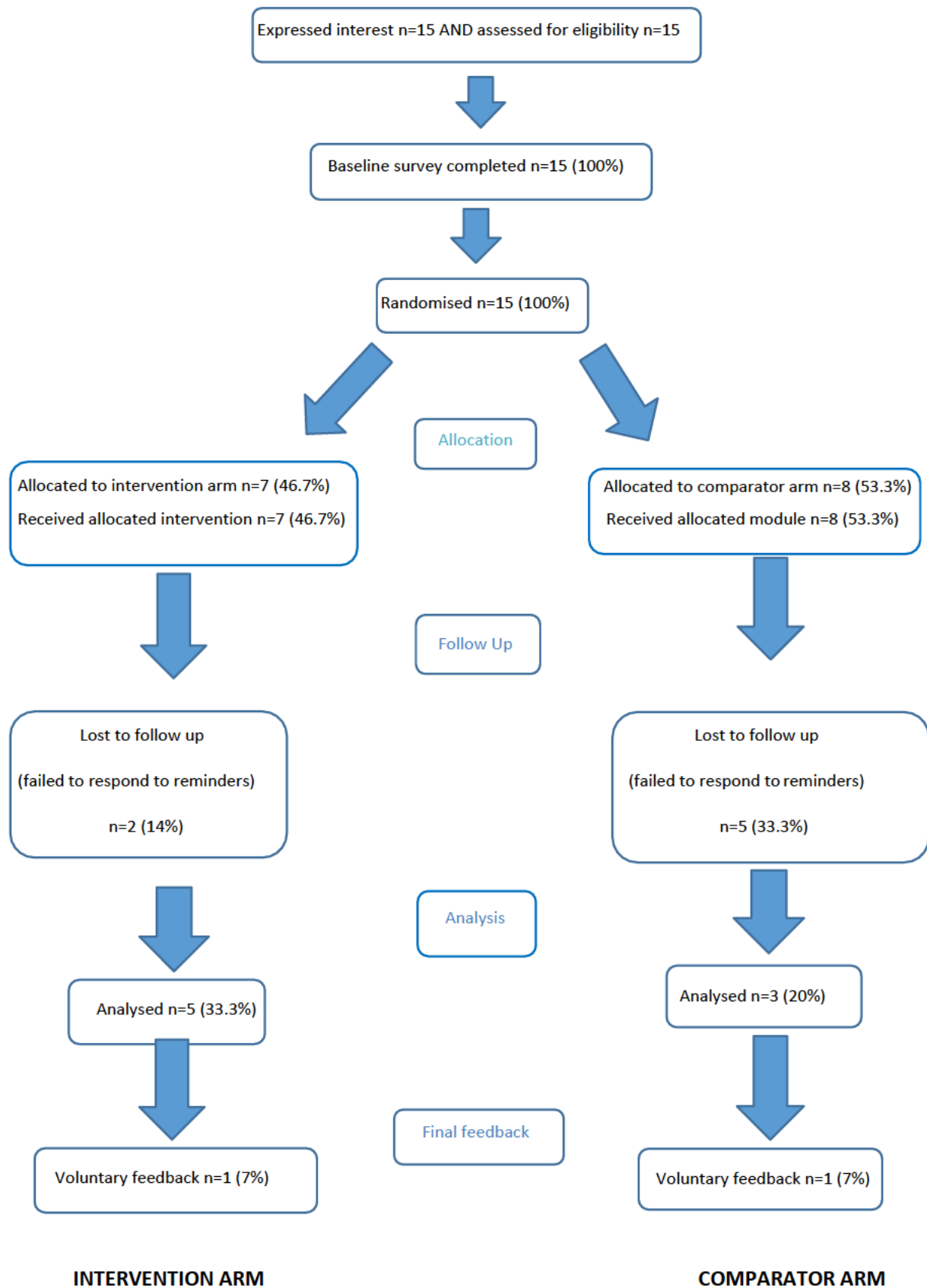


Figure 6.1 Flow of recruits through GPiMED

6.2 PARTICIPANT CHARACTERISTICS

Analysis of the 15 baseline respondents showed 80% (12/15) were female with a mean age of 32.2 years (SD 6.8) (Table 6.1). Examination of the age distribution showed that 86.7% (13/15) were in the 25-34-year age range and the remaining 13.3% (2/15) were in the 45-54-year age range. One third of the sample 33.3% (5/15) had children, all of whom were aged under 18 years. The majority 80% (12/15) were fluent in English only with the other three also fluent in the language of their country of origin (i.e. Korean, Harari (Ethiopian) and Vietnamese).

All but one participant completed their medical school training in Australia and of those, 66.5% had studied in Victoria. Nearly all participants 86.7% (13/15) had completed rotations in paediatrics and psychiatry, though none with specific Eating Disorder Units. All respondents had completed the first year of General Practice training with 66.7% (10/15) doing so in a metropolitan setting. There were 26.7% (4/15) current GPT2 participants with the remaining 77.3% (11/15) completing GPT3.

Practice location was evenly split with 46.7% (7/15) in a rural area and 53.3% (8/15) in a metropolitan area. Just over a quarter (4/15) of participants worked at exclusively bulk billing clinics (i.e. clinics at which the patient pays no gap fee and the Federal Government Medicare universal health scheme pays the doctor directly). Of remaining participants, 73.3% (11/15) were working at mixed billing clinics which have both bulk billing and privately billed fees.

Rostered hours per week ranged from 25-38 hours for 53.3% (8/15) of respondents, and 13-24 hours/week the next most common roster for 33.3% (5/15). Most respondents were seeing less than 4 patients per hour 86.7% (13/15) with the remaining 13.3% (2/15) seeing 4-6 patients per hour. When asked about total patients booked per week, 60% (9/15) reported seeing 51-100 patients/week, and 20% (3/15) saw 101-150/week.

Table 6.1 Comparison of selected characteristics of respondents that did not complete the study vs those that did complete

		Non-completers		Completers		Total	
		N= 7	%	N = 8	%	N = 15	%
Gender	M	1	14.3	2	25.0	3	20.0
	F	6	85.7	6	75.0	12	80.0
Year of grad	2002	0	0.0	1	12.5	1	6.7
	2010-11	1	14.3	2	25.0	3	20.0
	2012-13	6	85.6	3	37.5	9	60.0
	2014	0	0.0	2	25.0	2	13.3
Age	25-34	6	85.7	7	87.5	13	86.7
	35-44	1	14.3	0	0.0	1	6.7
	45-54	0	0.0	1	12.5	1	6.7
GPT	2	1	14.3	3	37.5	4	26.7
	3	6	85.7	5	62.5	11	73.3
Term location	Rural	4	57.1	3	37.5	7	46.7
	Metro	3	42.9	5	62.5	8	53.3
Children	Yes	2	28.6	3	37.5	5	33.3
	no	5	71.4	5	62.5	10	66.7
Years as GP	<1	0	0.0	2	25.0	2	13.3
	1-2	7	100.0	5	62.5	12	80.0
	>2	0	0.0	1	12.5	1	6.7
Hours worked/week	13-24	2	28.6	3	37.5	5	33.3
	25-38	3	42.8	4	50.0	7	46.7
	>38	2	28.6	1	12.5	3	20.0
Patients/hr	<4	7	100.0	6	75.0	13	86.7
	4-5	0	0.0	2	25.0	2	13.3
Patients/week	<50	1	14.3	1	12.5	2	13.3
	51-100	4	57.1	5	62.5	9	60.0
	>100	2	28.6	2	25.0	4	26.7
Billing type	Bulkbill	3	42.8	0	0.0	3	20.0
	Mixed	4	57.2	7	87.5	11	73.3
	private	0	0.0	1	12.5	1	6.7

Examination of the characteristics of those who completed the study compared to those who did not revealed that the main difference was the type of billing used by the practice in which they worked (Table 6.1). Three of the 7 non-completers worked in bulk billing clinics whereas none of those who completed all aspects of the study worked in bulk billing clinics. The other point of difference was that 2 of the non-completers worked more than 38 hours per week.

6.3 PRIMARY OUTCOME MEASURE

Baseline survey scores versus post intervention survey scores.

Eight participants completed the post intervention questionnaire that included two KFP cases. The time taken to complete this part of the study ranged from 14 minutes to 7 hours according to the time stamp on SurveyMonkey. The design of the survey was such they could leave it running and complete it over several sessions.

Case one was specifically designed to determine the respondents' capacity to identify and appropriately manage a patient with a possible eating disorder. Case two focused on sexual health and the concept of a mature minor. As outlined in the Methods chapter, answers on the KFP cases were scored over seven categories (i.e., HEADDs score, SCOFF score, history, examination, investigations, referrals and differential diagnoses), as well as a total score which was a sum of scores from the seven categories. Baseline scores ranged between 9 and 18 for the control group and 11 and 16 for the intervention group. The control group had a mean baseline total score of 14.3 whilst the intervention group had a mean baseline total score of 13.8. Post-intervention scores ranged between 27 and 30 for the control group and 16 and 29 for the intervention group. Table 6.2 displays the raw scores for the participants in each arm of the study with each row being the results for everyone who completed both pre and post sections of the study.

Table 6.2 Raw scores of respondents that completed both Baseline and Post-intervention answers to clinical cases

Participant Arm	Total Pre (45)	Total Post (45)	HEADD S Pre (10)	HEADD S Post (10)	SCOFF Pre (6)	SCOFF Post (6)	Exam Pre (10)	Exam Post (10)	Ix Pre (10)	Ix Post (10)	Team Pre (7)	Team Post (7)	DDX Pre (2)	DDx Post (2)
INTERVENTION														
	11	29	3	2	1	2	2	10	4	7	1	6	0	2
	26	23	9	4	0	0	7	7	9	8	1	2	0	2
	12	28	4	10	0	3	3	8	4	2	1	3	0	2
	16	23	3	1	0	1	7	7	6	9	0	3	0	2
	13	16	6	1	0	0	1	4	5	6	1	3	0	2
CONTROL														
	18	30	4	1	0	6	3	7	8	8	1	6	2	2
	9	27	2	1	0	6	3	7	3	8	1	3	0	2
	14	27	2	0	0	6	5	7	6	7	1	5	0	2

Total Scores

As stated at the start of this chapter, due to the low number of recruits we cannot place any significance on the statistical analysis conducted as part of this study. Despite this, the analysis was completed as part of the thesis process and results are presented in Table 6.3. This shows the results of a series of t-tests which were performed to estimate the difference between groups in the change in their pre and post scores. There was an increase in total score for both groups, with participants in the control group showing a greater improvement than participants in the intervention group (+18.4 v. +12.2). Total scores in the control group rose from a mean of 14.3 (95%CI -10.7 to 39.3) at baseline to a mean of 32.7 (95%CI 22.6 to 42.7) post-intervention with $p=0.048$. Scores in the intervention group rose from a mean of 13.8 (95%CI 7.5 to 20.1) to a mean of 26.0 (95%CI 19.4 to 32.3), $p=0.047$.

Table 6.3 Paired t-tests: Baseline Survey and Post module survey

Variable	Control Arm							Intervention Arm					
	N=3							N=5					
	Pre		Post		Change	p	Pre		Post		Change	p	
Max	Mean (SD)	95%CI	Mean (SD)	95%CI			Mean (SD)	95%CI	Mean (SD)	95%CI			
HEADDS 10	2.7(1.2)	-0.2 to 5.5	0.7 (0.6)	-0.7 to 2.1	-2.0	0.07	5.0 (2.5)	1.8 to 8.7	3.6 (3.8)		-1.8	0.52	
SCOFF 6	0 (0)	0	5.7 (0.6)	4.2 to 7.1	+5.7	0.003	0.40 (0.58)	-0.28 to1.1	0.80 (0.84)	-0.24 to 1.84	+0.4	0.37	
Exam 10	3 (3.6)	-5.9 to 12.0	8.3 (2.08)	-5.9 to12.0	+5.3	0.09	2.6 (1.8)	0.34 to 4.8	7.6 (1.8)	5.3 to 9.8	+5.0	0.02	
Investig 10	3.7 (3.2)	-4.3 to 11.7	7.7 (0.58)	6.2 to 9.1	+4.0	0.12	3.8 (2.9)	0.24 to 7.4	5.8 (2.0)	3.3 to 8.3	+2.0	0.13	
Diff1 Dx 2	0.6 (1.5)	-2.2 to 3.5	2.0 (2.0)	2.0	+1.4	0.18	0 (0)	0	2.0 (2.0)	2.0	+2.0	nil	
Team 7	1.0 (1.0)	1.0	4.7 (1.5)	0.87 to 8.5	+3.7	0.05	0.8 (0.4)	0.24 to 1.35	3.4 (1.5)	1.5 to 5.3	+2.6	0.02	
Total Score 45	14.3 (10.1)	-10.7 to 39.3	32.7 (4.0)	22.6 to 42.7	+18.4	0.048	13.8 (5.1)	7.5 to 20.1	26 (5.3)	19.4 to 32.3	+12.2	0.047	

Examination scores t-tests

Participants in both arms improved in their mental and physical examination of the patients in the case studies, however the gains between pre-and post-module measurements in the intervention arm reached a higher probability of significance than in the control arm. Intervention group scores rose from mean of 2.69 (95%CI 0.34 to 4.8) to a mean of 7.6 (95% CI 5.3 to 9.8) whilst the control arm baseline mean was 3 (95%CI -5.9 to 12.0) while the post-module mean was 8.3.

Investigation scores t-tests

Both arms improved in their scores on the correct investigations they should order with an improvement of 4 in the control arm and 2 in the intervention arm. However, the improvements from baseline did not reach significance for either arm.

Differential Diagnoses t-tests

In the baseline survey, participants in both groups made little or no mention of an ED as a possible differential diagnosis. However, there was an improvement for participants in both study arms at follow-up. The control group had a baseline mean of 0.6, and a post score of 2 whilst the intervention group had a baseline score of 0, and a post-module score mean of 2.

Multi-disciplinary Team scores t-tests

The greatest improvement in scores was observed for multi-disciplinary team scores, with differences between baseline and follow-up scores reaching significance, albeit with wide confidence intervals. Figure 6.2 illustrates the change in responses of the intervention cohort as to which health professionals should be included as part of a multidisciplinary care team for a patient with a possible eating disorder. There was an increase in the identification of other health professionals who would be included in the multidisciplinary care team. At baseline, only 20% of respondents indicated that a psychologist would be part an appropriate member for the care team. Following the intervention 75% identified that a psychologist should be included in the care team. Similarly, only 8% of respondents identified referral to a dietician before completing the module but this increased to 85% after completing the module. Recognition of number of health professionals to enlist as part of the care team was evident after completion of the module.

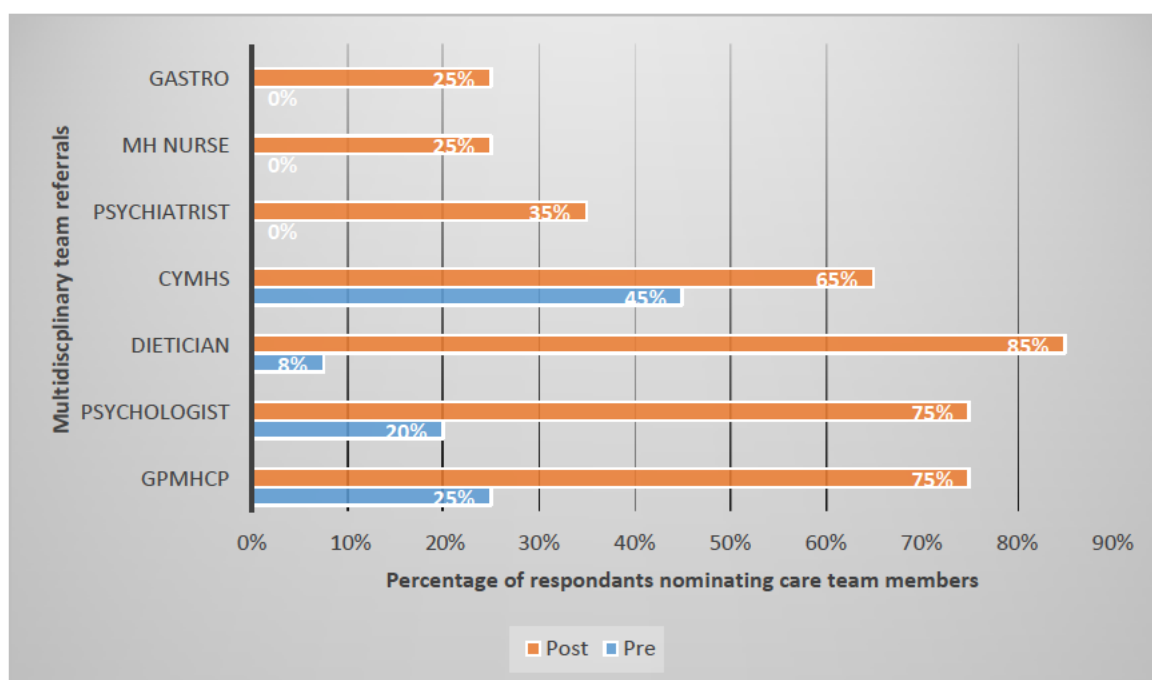


Figure 6.2 Comparison of scores for intervention cohort: baseline pre- and post-intervention multidisciplinary team members to include in the patient's care

Gastro-gastroenterologist, MH-Mental health, CYMHS-Child Youth Metal Health Service, GPMHCP-GP Mental Health care plan

6.4 SECONDARY OUTCOME MEASURES

SCOFF Scores

A key secondary outcome was the SCOFF score in clinical case responses (maximum 6). All three recruits in the control group scored the maximum score of 6 post-intervention having a baseline score of scored 0. The post-intervention mean score was 5.7, SD 0.6 (95% CI 4.2-7.1; $p=0.003$). The intervention group had a baseline mean score 0.4, SD 0.58 (95%CI -0.28 to1.1) with post-intervention mean score 0.8, SD 0.84 (95%CI -0.24 to 1.84). This result was not significant ($p=0.37$).

Satisfaction and confidence in managing Youth and Young Adult issues

The next section of the baseline survey asked respondents how satisfied they were with the youth mental health training received in medical school and during their post-graduate training, and how confident they were in dealing with youth and young adult health issues (Table 6.4). Of the 15 participants, 33.3% (5/15) were satisfied with the training and education

they received as medical students, 46.7% (7/15) were equivocal and 20% (3/15) were unsatisfied. On the question of confidence in dealing with youth and young adult health issues, 46.7% (7/15) were confident, the same percentage were equivocal, and the remaining respondent was not confident.

Post Graduate satisfaction with training showed 26.6% (4 /15) were satisfied, 53.3% (8/15) were equivocal and the last 20% (3/15) were unsatisfied. Eleven of the 15 participants (73.3%) reported that they had undertaken professional development about potentially fatal mental health conditions in the past year.

Only 47% of registrars were confident in their capacity to manage youth mental health issues and most were equivocal or not confident after medical school and postgraduate training.

Table 6.4 Baseline satisfaction and confidence regarding training and capacity to manage youth mental health issues

Total respondents N=15	Medical student training satisfaction		Post-graduate training satisfaction		Confidence in managing youth mental health issues	
	n	%	n	%	n	%
Unsatisfied/Not confident	3	20.0	3	20.0	1	6.6
Equivocal	7	46.7	8	53.3	7	46.7
Satisfied/confident	5	33.3	4	26.6	7	46.7

Follow up surveys

Four of the respondents indicated in their post-module survey that they would be happy to be contacted by email to complete a feedback survey. These were promptly emailed and 2 were returned after 2 reminders were sent. One respondent had completed the ED (intervention) module and one had completed the youth mental health (control) module.

The 2 participants who completed the feedback survey were consistent with their answers. In answer to question 1, both were motivated to volunteer as it was a learning opportunity for what was perceived as an important topic. One respondent commented that she was also interested in primary care research. Answers to question 2 also were similar, in that they hoped to increase clinical knowledge and skills. Both commented that the module they had completed was easy to navigate and neither had any difficulties with completing the surveys. Both respondents were happy with the design and layout and visual appeal of the module and neither had any difficulties in using it.

The next two questions asked about level of satisfaction with the quality and quantity of the information plus reference credibility. Both responses were positive with a comment made by one of the respondents that fewer videos might have been better as the internet streaming capacity may not allow for seamless streaming in some parts of the country. Question 9 asked whether having completed the module, they felt better equipped and more confident in dealing with eating disorder patients and both answered in the affirmative. One qualified the response by stating that further education would be required before she felt confident in dealing with the more chronic patients with entrenched behaviours. The final question asked whether they would recommend the module to colleagues and again both answered yes.

6.5 MAPPING OF GPimED USING THE THEORETICAL DOMAINS FRAMEWORK (TDF)

The final aim of this study was to examine how well the ED module adhered to the principles of Implementation Science as discussed in Chapter 3. The purpose of this aim was to assess how it measured up to what is considered best practice in designing a meaningful agent of change. The Behaviour Change Wheel described in Chapter 3 utilises the COM-B framework with the TDF mapped across it. The COM-B looks at capability, opportunity and motivation that can work together to affect behaviour change and the Behaviour Change Wheel expands on this by utilising the TDF to map out the key aspects of the intervention- in this case the module to see ascertain the likely efficacy of the intervention in achieving change.

The first step in the TDF is who needs to do what differently? The specific tasks in this step are to: identify the evidence-practice gap; specify the behaviour change needed to reduce the evidence-practice gap; and specify the health professional group whose behaviour needs changing. The *Recognising Eating Disorders in General Practice Module* satisfactorily meets this step. The module has been based on the best practice guidelines produced by the RANZCP (2013) and as canvassed in Chapter 2, there is evidence indicating that GPs are often the first health professionals a patient will present to, plus further evidence identifying that ED patients are often misdiagnosed and then poorly managed by their GP even when diagnosed with an eating disorder. This delay in appropriate treatment leads to poorer outcomes and greater cost to the individual and the community, hence the need for behaviour change in the GPs. By better identifying patients at risk of developing an eating disorder by using screening tools and then having improved referral and management strategies, the outcomes for patients will improve.

The second step in the TDF is to use a theoretical framework and identify which barriers and enablers need to be addressed. The literature has clearly identified the barriers and enablers that impact on whether GPs identify and engage with patients with potential or established eating disorders. There are GP factors plus patient factors that can make the consult problematic. These have been tabulated against the theoretical framework in Table 6.5.

Table 6.5 Mapping of ED module barriers and enablers

Barriers and enablers	Theoretical framework
limited ED specific training during medical school and GP training	knowledge (GP)
low awareness of prevalence and at-risk groups	knowledge (GP)
lack of time in the fee for service health provision model in Australia	environmental context, social/professional role (GP) knowledge (GP), skills (GP) belief about consequences, skills (GP)
GP perceptions of patient compliance real/perceived	knowledge (GP), knowledge (patient), beliefs about consequences (GP)
Patient ambivalence	beliefs about consequences, knowledge (patient) social influence/emotion, behavioural regulation

The third step asks the question: which intervention components, behaviour change techniques and modes of delivery could overcome the modifiable barriers and enhance enablers?

Several barriers identified in the literature review were GP-related and included lack of time and difficulty accessing relevant information. The ED module seeks to address these barriers (Table 6.6). It is available online at any time for RACGP members' convenience, takes only 1 hour to complete, is evidence-based, clearly covers the red flag issues, and uses screening tools. There are also links to the relevant peak bodies which offer further tools and resources.

Table 6.6 Intervention components to overcome barriers

Barrier	Intervention technique	Mode	Content
Limited ED training, low awareness, lack of referral knowledge	Information provided in concise evidence-based format	Upskilling via online ED module, views of simulated consultations, with links to best practice websites: Butterfly Foundation, EDV, NEDC	Evidence-based information, red flag algorithm, education in use of screening tools and pre- and post-competency testing
Lack of GP time	Easy access to relevant information in a concise format of only one hour	ED module content	Education engagement, suggest offering long appointments
GP perceptions of patients, patient	Improve capacity to identify and engage at risk patients	ED module content	Engagement techniques e.g. non-judgmental communication
GP skills and competencies	Improve GP skills and knowledge, barrier identification of patient e.g. ambivalence	ED module content	Pre/post survey

The final step asks the question how can behaviour change be measured and understood? This involved identifying mediators of change to investigate the proposed pathways of change, selection of appropriate outcome measures and determining feasibility of the outcomes to be measured.

The mediators of change could be assessed within the ED module as there was the opportunity to answer questions posed throughout the module with immediate feedback upon submitting the answers. This could be used to ascertain the level of knowledge that the

registrar demonstrated coupled with corrections or expansion on the answers with appropriate links to evidence-based references.

The mapping of the module indicates that it satisfies the TDF well. However, ideally any intervention should have a framework of Implementation Science as an integral part of design process rather than being analysed retrospectively. The RACGP is a leader in professional development so perhaps it is not surprising that it is has been well constructed.

In this chapter, both the quantitative and qualitative results of the GPimED trial have been analysed. The following chapter will discuss these results and ponder the strengths and limitations and scope for further research.

DISCUSSION & CONCLUSIONS

“There are no facts, only interpretations”

Friedrich Nietzsche 1886

7.1 INTRODUCTION

The purpose of this final chapter is to discuss the study results, consider them in light of findings from previous studies and identify opportunities for future research around clinician education in eating disorders. The chapter is presented in five sections. This introduction is followed by a summary of the principle findings and the third section discusses the strengths and weaknesses of the methodology. The fourth section considers the current results compared to findings from previous studies and the fifth section identifies opportunities for further research and clinical practice. The thesis closes with a summary of conclusions.

7.2 SUMMARY OF PRINCIPLE FINDINGS

Despite our best efforts to recruit as many GP Registrars as possible, with the limited promotion by the Training Consortia there was significant difficulty in recruiting participants and the final numbers were low. Because of the small sample size, estimating the impact of the ED educational model had to be made by considering trends rather than by statistical inference. As such, the findings of this study should be interpreted cautiously.

The hypothesis for this study was that completion of the ED training module would improve GP Registrars' detection of ED compared to the control group. This hypothesis was based on the expectation that the intervention group would receive online education specific to ED that would increase registrars: 1) knowledge of appropriate screening tools, 2) ability to recognise clinical signs and red flags in a patients' history, and 3) willingness to initiate appropriate investigations and referrals. In contrast, the control group received general youth

mental health education. The control module did feature the HEADSS screening framework but did not place emphasis on the ED specific SCOFF screening tool, hence it was anticipated that there would not be any impact on overall performance regarding ED detection. However, this hypothesis was not supported. Contrary to our expectations we found that, although participants in both groups showed improvements at follow-up, the control group improved more than the intervention group.

Even though the hypothesis was not supported, the results of this study suggest that a brief online ED education module may improve the competency of junior GPs in recognising and managing patients with eating problems. The baseline competencies in both groups were poor. Participants demonstrated a lack of knowledge of the SCOFF screening tool, taking an appropriate history and examination, investigations to order and referrals to be made. The low baseline scores provided substantial opportunity for improvement and this was borne out. Both groups showed an improvement in total scores between baseline and follow-up with a greater improvement in the control arm. These findings indicate that any mental health training at the registrar level, not just ED specific, improves clinical knowledge and increases the likelihood of having an ED as a possible diagnosis. One explanation for this finding is that registrars are starting from such a low base level regarding management of youth mental health issues in a community setting. Exposure to any training that advocates asking patients about their diet and sleep as occurs with the HEADSS/HEEADSSS for example, will make them more comfortable in enquiring further about other aspects of the patient's mental wellbeing. This could account for the improvement in the control group as well as the intervention group that learnt specifically about the SCOFF screening tool. Also, both modules were quality products designed according to evidence-based guidelines so it could be expected that the active control would have a positive effect.

Comparison of the various components of the pre- and post-surveys for both intervention and control groups revealed some interesting anomalies. There was no improvement in the scores concerning the investigations ordered for either group, yet both groups had improved scores regarding referrals to create a care team which is an integral part of management. The concept of having a multidisciplinary team providing care to the ED patient was the area

showing greatest improvement for both groups which was very pleasing given the emphasis placed on this by the RANZP Guidelines released in 2013 (Hay et al., 2014).

Regarding the change in use of screening tools, a major finding of interest was that for both groups the baseline knowledge of the SCOFF was virtually non-existent, and that both arms improved after their respective interventions. The mean baseline score (out of 2) for the intervention group was 0.4 rising to a post mean 0.8. However surprisingly, the change in SCOFF score indicated an improved score for the control group compared to the intervention group with a baseline mean of 0 improving to 2 post intervention. The HEADSS assessment by comparison showed a decrease in the post-module scores in both groups which is difficult to understand. One possible explanation is that during medical school or registrar training, there is a focus on the HEADSS assessment (e.g. It is outlined in the RACGP Redbook on preventive care) and then the modules introduced a range of other screening tools that may have diluted the use of direct HEADSS questions.

Regarding registrar satisfaction with youth mental health training, the GPimED findings were consistent with previous literature which indicates that there are few ED training opportunities for doctors in training (Mahr et al., 2015). We found that a minority of registrars were satisfied with the youth and young adult mental health training they had received. Only five of 15 respondents (33.3%) were satisfied with the medical school training they received in youth health issues, and only four of 15 (26.6%) expressed satisfaction with post graduate training on this topic. Despite the low levels of satisfaction with training, there was a reasonably high level of confidence in managing youth mental health issues at baseline. We found that 7 (46.7%) were confident, 7 (46.7%) were equivocal and only 1 (6.7 %) admitted to not being confident in managing health issues in the youth and young adult patient populations. The levels of confidence reported by participants was in contrast with the general poor performance across both groups in the baseline clinical scenario indicating a possible inflated sense of capacity to manage these sorts of cases.

The final component was the qualitative appraisal of the module against the implementation science criteria. The mapping process indicated that the module's design accorded with evidence-based principles for changing clinician behaviour, hence we expected it to make a

difference based on how it was constructed. Even though there were low numbers in the study, the results are positive, supporting that it is of good design. From these pilot figures, registrars completing the module did improve their performance in diagnosing and referring patients to appropriate other key health workers which is a positive outcome and is known to lead to better patient outcomes in the long term (Eating disorder policy paper, 2016; Hay et al., 2014).

7.3 LIMITATIONS AND STRENGTHS OF THE STUDY

The major limitation to this study was the low sample size. In the process of designing the research, it was decided to recruit doctors in training rather than established GPs to minimise the skewing of results due to prior experience and expertise. Consequently, recruitment was conducted via third parties, in this case the two Victorian Regional Training Consortia, to gain access to GP registrars. Uptake was limited to 15 in total, all from MCCC (9.4% of their available GPT2 and GPT3 Registrar cohort) who directly emailed each Registrar on their list with our recruitment materials. The EVGPT consortia did not actively recruit participants, and only agreed to a paper-based distribution of information at one of their unrelated training events. It is perhaps not surprising given this low intensity process that there were no expressions of interest from any EVGPT GP Registrars. The comparison of EVGPT and MCCC response rates is testimony to the need for more active recruitment if the study is to have meaningful representation of the population being studied. The spectre of selection bias needed to be considered also given that all the recruits were from MCCC and that the recruitment material distribution methods was beyond the candidate's control.

Even though MCCC more actively recruited on our behalf, emails were only sent once. Prior work would indicate that several reminders about participation might result in higher numbers of participants (Abdolrasulnia, Collins, Casebeer et al., 2004).

To circumvent going through the training consortia, one might have reached the GP Trainees via some of their closed Social Media groups however that is problematic and raises possible issues with Ethics Approval.

While recruiting GPs has its challenges (Hummers-Pradier et al., 2008; Jones, Dixon, Falkingham, Piteman, & Dixon, 2011), recruiting registrars for research presents additional barriers.

The usual way to recruit registrars in Australia is via the training consortia who enrol GP registrars and therefore have their contact details. This places training consortia in a position of acting as gatekeepers to registrars who they do not want overwhelmed with requests for participation in research projects. Training consortia therefore exercise caution about when and how they allow researchers to gain access to registrars through their lists.

There may also have been other reasons for the poor uptake. GP registrars, like GPs, are time poor and this trial had significant time investment without direct re-imbursement for time taken. They are also getting to grips with the Australian primary health care system as well as studying. The baseline materials took on average 27 minutes to complete, plus one hour for the module, and then post-materials taking another 21 minutes to complete according to SurveyMonkey data analysis. Randomised trials, although producing the highest standard of evidence for effectiveness, are expensive to undertake and resources available for this trial precluded direct reimbursement to all participants. Furthermore, the process of accessing information and conducting randomisation, emailing a link to survey materials, and follow-up involved several steps. A bespoke online trial management software may have circumvented some of these processes, but this was at the time not accessible by the student researcher or within budget.

Another significant limitation was the reliance on KFP cases rather than the gold standard of Unannounced Standardised Patients (USPs). A USP, otherwise known as a 'Mystery Shopper', is an unannounced undercover trained "consumer" of services and has been practiced in the world of business and marketing for many years. Since the 1960s USPs have been used in the health sector as a means of assessing quality of health care provision. USPs are considered the gold standard method in assessing clinical performance (Rethans et al., 2007). Use of USPs have also been incorporated into clinical assessments of medical students and postgraduate specialist examinations (Siminoff et al., 2011).

Weiner and Schwarz (2014) examined the various methods of evaluating clinical practice-by examining clinical notes, direct observation, and the use of USP. They found that USPs are effective in making more accurate assessments of the clinician performance and identify deficits that would otherwise be missed.

To date, most studies have looked at finding deficits in clinical performance or patient satisfaction evaluation rather than looking to measure improved performance after an intervention (Moriarty et al., 2003; Elman et al., 2013; LaVela & Gallan, 2014).

McGaghie et al. (2009) published a critical review of simulation-based medical education research. The articles examined use in a medical education setting, evaluating clinical skill acquisition, delineating the most useful forms of feedback delivery to maximise the learning benefits for the participants, and the outcomes regarding successful transfer to practice. In the context of the GPimED study, this last aspect was to be the key in assessing the feedback from the USP particularly from the visits with those GP Registrars that would have completed the one-hour online intervention module. The planned visits were to be 8-12 weeks post notification of intervention and would assess transfer to practice. Unfortunately, the numbers required after the sample size calculations were completed made the USP model totally unviable.

One of the strengths of the GPimED study was that it underwent rigorous design and followed the procedure for an RCT. A pilot was done to test the whole process using honorary associates of the Department of General Practice University of Melbourne. From their feedback, slight modifications were made to the surveys and means of access prior to conducting the main study. Even though there was not a high response rate, it followed all procedures according to protocol. The measures worked well and were discriminating. The decision to use an active control was to give all participants something for the effort of participation. After the initial preliminary discussion with the training providers, it was agreed that having an active control would more likely entice participation and get endorsement from the training providers as it would be a worthwhile learning exercise for all participants.

A major strength of this study compared to previous studies investigating the impact of education on clinician's competence was the inclusion of pre and post assessments using KFP clinical vignettes to objectively measure changes in knowledge and behaviours. Previous studies have relied on subjective, self-reported changes in knowledge and competence which is, as discussed in more detail in the next section, is a weak proxy for measuring change in clinical performance.

7.4 COMPARISON WITH PREVIOUS LITERATURE

The literature review for this study showed that there has been little previous research investigating the role of general practitioners in diagnosing and managing patients with ED or into the efficacy that educational interventions have on GP performance. The current study adds to the growing body of evidence on this topic and confirms previous findings showing a low level of competence among primary care physicians in recognising and managing ED.

Research into the knowledge and confidence of GPs in managing ED patients has previously been conducted in Ireland (Flahaven, 2006) and the United States of America by Banas et al. (2013). The Irish study, which was a postal survey of 360 Dublin GPs with a 25% response rate, Of the GPs that responded, 82% rated themselves as being competent at recognising ED yet 84% did not screen even at-risk populations and were unaware of evidence-based guidelines. Furthermore, most did not feel confident in managing ED in their clinics and the resultant delays in diagnosis and referral resulted in poor treatment outcomes. The GPimED study findings confirmed this with the baseline survey responses and sadly indicates that in the 14 years since the Flahaven study, Australian training has made few gains in preparing GPs to manage ED patients. The US study by Banas et al. (2013) was an online survey which found similar results to the current study in that GPs appear ill equipped to diagnose and managed ED patients.

The authors of both papers argued that the lack of competency among GPs in diagnosing and managing ED could be attributed to a lack of ED training in both the undergraduate and postgraduate curricula. The GPimED study baseline findings seem to concur with these findings in that the satisfaction with training in youth and young adult mental health issues was low in most of the responses. A notable difference between the current study and previous work in this field is that confidence among Victorian GP registrars was quite high regarding their capacity in dealing with youth and young adult despite their dissatisfaction with training received thus far in their careers. It is however, a similar finding to the disconnect between self-reported confidence and actual assessed competency that was demonstrated by Barnsley et al. (2004). This study examined first year hospital doctors and their competency in performing a range of basic procedures and examinations. An earlier

study by Hodges et al. (2001) also concurs with this apparent overconfidence regarding clinical skills held by junior doctors and again matches the baseline survey findings of GPimED and would indicate that reliance on self-reporting of improved knowledge and skills is not useful.

Previous work examining doctors' capacity to diagnose ED was conducted using clinical vignettes featuring sick children with significant weight loss. This was a UK study by Bryant-Waugh, Lask and Shafran et al. (1992) which found that only 2% of primary care physicians (GPs) considered ED as a possible differential diagnosis compared to 31% of paediatricians. Similarly, Linville et al. (2010; 2012) surveyed medical practitioners in Oregon USA and found that 68% of respondents did not think to screen for ED and 59% felt ill equipped to diagnose and manage such patients with feedback comments that improved training in ED management would be a possible way to improve this. A similar low level of diagnostic competency regarding ED among GPs was also found in the GPimED baseline survey with none of the intervention arm including ED as a differential diagnosis at baseline, and the control arm mean score was only 0.6 out of 2.

This phenomenon of poor recognition of possible ED has been attributed to lack of training during medical school and post-graduate years as well. A study by Mahr et al. (2015) examined access to ED specific training rotations in 637 medical post-graduate training programs in the USA. Specialities ranging from paediatrics, psychiatry, general practice, and physician training were included. It revealed that in the 201 General Practice training programs, the mean time spent on training in ED was a mere 3.55 hours with many having no training at all. This finding was mirrored in the GPimED baseline survey which had rotations in an ED unit as one of the criteria making the respondent ineligible to participate. None of the respondents listed rotations in either an adult or adolescent ED unit as part of their training.

Efficacy of eLearning as a means of improving health workers' clinical skills was also considered as part of this research project. De Beurs et al.(2013) completed a comprehensive study in the Netherlands examining the effect of an e-learning supported train-the trainer program as a means of improving the application of clinical practice guidelines for assessment and treatment of suicidal behaviour. This multi-centre RCT, titled Professionals In Training to

STOP Suicide (PITSTOP), involved 43 psychiatric departments in The Netherlands and recruited Psychiatrists, psychologists, registered nurses, and physicians across the departments. This study, although on a much grander scale than the study in this thesis, developed and incorporated an e-learning module as part of their intervention. In their background work it was determined that e-learning modules can complement face to face training and implementation of guidelines and improve adherence to departmental protocols. The results of GPimED study indicate that both the online training modules in mental health that were part of this study did improve the early identification and management of patients with a potential ED.

Evaluation of an existing 17.5-hour online ED program for health professionals, called “The Essentials”, which has been available for a number of years on the CEDD website (now renamed the InsideOut Institute) has been conducted twice. This program was evaluated by Brownlow et al. (2015) in a pilot study and has been discussed previously in Chapter 2. It has since been re-evaluated by Maguire, Li, Cunich, & Maloney (2019). This recent study revisited the “*The Essentials*” program and surveyed participants who had enrolled in the program between 01/10/2013 to 31/07/2018. A total of 1813 health workers had completed at least 80% of each of the 5 modules. A total of 38 GPs (2.1%) had enrolled during the 5-year period being examined. The methodology was as for the pilot study in 2015 and looked only at perceived improvements in clinical skills and knowledge without clinical performance being assessed by any means such as pre and post clinical vignettes such as utilised in this study. To date, there has not been any published studies specifically evaluating the impact of an ED online program designed for medical practitioners that includes pre and post intervention assessments scoring clinical scenarios.

7.5 FUTURE RESEARCH

Previous research demonstrates that GPs perform poorly in the diagnosis and management of ED. Studies have shown that ED patients present more frequently to their GP than age matched peers and there are missed opportunities to engage with the individual and make the diagnosis. We have discovered that ED education is not typically part of training either for medical students or in the post graduate GP training in Australia or overseas (Mahr et al., 2015; Banas et al., 2013). This may account for the long delay between the onset of

symptoms and a formal diagnosis and the ensuing poor outcomes. The key to better outcomes for those at risk is early diagnosis and intervention. The literature reveals that general practice is perfectly situated to identifying patients with at-risk thoughts and behaviours, and to then order appropriate investigations and referrals (Ogg et al., 1997; Hugo et al., 2000). Early intervention has been demonstrated to reduce patient morbidity and improve the likelihood of a full recovery (Steinhausen 2002; Simon et al., 2013; Johnston, Fornai, Cabrini, & Kendrick, 2007). Online education or eLearning has been shown to be effective in upskilling GPs on many topics and can potentially be a modality for increasing GPs ability to recognise, manage and appropriately refer ED patients. Online education has also been found to be very acceptable and convenient for GPs to pursue professional development. The RACGP developed just such an ED specific online education module that was launched on their gpLearning platform in 2016 and this study has aimed to assess its effectiveness.

Even though this study was unable to achieve a sample size capable of proving or disproving the hypothesis, it could be a suitable pilot from which future research could benefit. Lessons learnt include the need for active recruitment in collaboration with the training providers, which may require greater financial incentives or including the RTPs as co-investigators as has been a successful model in another study. A fellow research student's project occurring at the same time did attract the partnership of both Victorian RTPs as it was assessed as relevant to their core functions and was a simple survey. For this project both RTPs disseminated the survey link through their network and the response rate was 41% (217/530) (personal communication from LA Sancu about the research paper currently under review with AFP) which is much higher than the GPimED recruitment rate. If a similar uptake had been achieved for the GPimED study, that may have made this study's results more definitive.

Further research opportunities might be possible with an Australian Federal Government project currently being undertaken in the State of Queensland. This is a Department of Health initiative announced on 13th June 2018. It will run for 3 years with a budget of \$3.2 million. This joint project is being co-ordinated by the Butterfly Foundation, which is the peak Eating Disorder support body in Australia, and the Central Queensland Wide Bay, Sunshine Coast

Primary Health Network. It is looking at delivering best practice treatment pathways including upskilling the GP workforce and provide “wrap around care” to patients with an eating disorder in the community. Details of the ED module have been provided to the relevant staff at the Primary Health Network and is proposed to be used as one of the education tools for the GPs on the Sunshine Coast who participate in the trial (L. Cook, personal communication, October 2 2018). Given the level of interest and with adequate funding, there could scope to use USPs rather than clinical vignettes. This would provide stronger data for actual behaviour change and an additional follow up 6-12 months post intervention to assess retention would be desirable also.

The Australian Federal Minister for Health Greg Hunt said the Queensland project will involve local health professionals being trained to provide eating disorder-specific treatment. *“Local general practitioners will be trained to identify, assess and treat eating disorders”*, Minister Hunt said. *“The project will also include the development of networks between trained health professionals to create integrated treatment services.”* (Butterfly Foundation 2018). This project is working with established GPs within the PHN catchment plus several GP Registrars that will be completing their training at supervising practices so could potentially assess the module acceptance and effectiveness with the whole gamut of GP rather than only GP registrars as in GPimED.

7.6 CONCLUSION

Eating Disorders have the highest mortality rate of any psychiatric condition and have a huge impact on the patient, their families, and carers. In addition, ED cost the community vast amounts of money in lost productivity. In acknowledgement of the longstanding underfunding of ED care, since late 2019 the Australian Commonwealth Health Department through the universal healthcare scheme Medicare, has funded increased sessions with allied health practitioners for patients that have been diagnosed with an eating disorder. Up to 40 subsidised sessions with a psychologist and up to 20 sessions with a dietician per year will now be accessible to those patients that have been diagnosed with a serious Eating Disorder (e.g. Anorexia Nervosa, Bulimia Nervosa and Binge Eating Disorder) by a GP. The GP can then complete an Eating Disorder Care Plan following strict eligibility criteria (refer Appendix 9).

This will make the required intense therapeutic support more affordable to those with a diagnosed ED, thus partly addressing the identified financial burden on families with a loved one diagnosed with a serious ED that requires intensive long-term counselling.

The potential weak link in this worthy initiative is that the GPs are the most accessible health professionals eligible to complete these health plans. If GPs continue to be inadequately equipped to recognise and diagnose eating disorders, then patients will miss getting the requisite plans done. And so, the lack of timely intervention may continue and will potentially prolong the misery that so many people with eating disorders live with daily. The new plans can also be completed by Specialist Psychiatrists and Physicians, however within the Australian Health Care system, patients need a referral from their General Practitioner to access specialists before they can be assessed.

In February 2020, the RACGP decided to include ED for the first time in the mental health section of the next edition of “The Red Book” Guidelines for preventive activities in general practice. This is an indicator that ED are finally being recognised as an important and serious group of mental and physical illnesses. This coupled with increased focus in the Primary Health sector, will alert GPs of to the need to upskill themselves in the management of these serious disorders.

Given there was a measurable improvement for both cohorts of GP Registrars coupled with good acceptability of the module there is the possibility that the Training Consortia may consider recommending the ED module to all registrars as an integral part of their mental health training. The author intends to explore this further with the two Victorian Training Consortia once the results are submitted. There may also be scope to have it part of the mental health training for GPs Australia wide. At the completion seminar for this study, a GP registrar in the audience stated that his supervisor had directed him to the ED module as a worthwhile resource.

The ED module being evaluated by this study enabled participants to learn about the recommended approaches to engage and take a thorough, meaningful history from a patient with a possible ED. This involves asking about their diet and relationship with food. The

Butterfly Foundation, Insights into Recovery (2016) document states that using a screening tool and asking a person directly about their eating habits is a way to get them to start divulging and raise the possibility of an ED being a differential diagnosis. This appears to be a skill lacked by GPs according to studies already discussed. In the modules used in this study, the use of screening tools that involve direct questioning about eating patterns either via SCOFF or HEADSS were an integral part of the learnings. In the student researcher's years of ED clinical experience, asking the person directly about their eating patterns and relationship with food is a successful way to start the conversation and get the patient speaking more about the emotions surrounding body image, weight, shape and food. This then further opens up the discussion on whether they engage in compensatory behaviours such as uncontrollable exercise and purging behaviours. The patient is usually extremely relieved to be speaking with a doctor who seems to understand the incredible power that the eating disorder has, and someone who acknowledges the shame and guilt that is so often associated with living with an eating disorder.

It is hoped that the GPimED study may in some part raise awareness of the importance of upskilling not only doctors in training but also established GPs who are so often the gatekeepers for patients to access health care. For patients with ED today this is even more so the case. The *Early recognition of eating disorders in general practice* online module is not the great panacea but is an accessible, quick, user friendly learning tool that may make a difference to the quality of care GPs provide to this very vulnerable and complex group of people in our community.

7.7 EPILOGUE

In Australia, the professional development obligations require GPs to participate in many hours of educational activities to retain their medical registration. The use of online learning has been promoted to general practice as a convenient way to undertake professional development no matter where you practice and there are hundreds of learning opportunities available on the RACGP gpLearning platform. Table 7.1 displays the uptake of the ED module evaluated in this study. As of 13/01/2020 642 GPs had completed the module. The RACGP Education Units monitors access and completion rates of their online learning modules. The RACGP Educational Technical Lead Emily Jackman provided the uptake data on the ED module uptake and commented that industry standard regards a 20% completion rate of online learning as very good or excellent .Unfortunately further analytical data regarding the completers was not available The very good completion rate could indicate that those GPs that have enrolled found it a worthwhile learning exercise and have completed the module.

Table 7.1 RACGP gpLearning Data for uptake of the Eating Disorder Module as at 13/01/2020

Version	Length of release	Enrolled	Completed	Percentage completed
2014-16	6 months	142	142	100%
2017-19	36 months	1215	500	41%

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Appendix 1

DSM-V DIAGNOSTIC CRITERIA FOR EATING DISORDERS



Pica

- A.* Persistent eating of nonnutritive, nonfood substances over the period of at least 1 month.
- B.* The eating of nonnutritive, nonfood substances the inappropriate to the developmental level of the individual.
- C.* The eating behaviour is not part of a culturally supported or socially normative practice.
- D.* If the eating behaviour occurs in the context of another mental disorder (e.g. intellectual disability, autism spectrum disorder) or medical condition (e.g. pregnancy), it is sufficiently severe to warrant additional clinical attention.

Rumination Disorder

- A.* Repeated regurgitation of food over the period of at least one month. Regurgitated food may be re-chewed, re-swallowed, or spit out.
- B.* Not attributable to an associated gastrointestinal or other medical condition (e.g. reflux).
- C.* Does not occur exclusively during the course of anorexia nervosa, bulimia nervosa, binge-eating disorder, or avoidant/restrictive food intake disorder.
- D.* If symptoms occur in the context of another mental disorder (e.g. intellectual disability), they are sufficiently severe to warrant additional clinical attention.

Avoidant/Restrictive Food Intake Disorder

- A.* A feeding or eating disturbance (e.g. lack of apparent interest in eating food; avoidance based on the sensory characteristics of food; concern about aversive consequences of eating) as manifested by persistent failure to meet appropriate nutritional and/or energy needs associated with one (or more) of the following:
 - 1. Significant weight loss (or failure to achieve expected weight gain or faltering growth in children).
 - 2. Significant nutritional deficiency.
 - 3. Dependence on enteral feeding or oral nutritional supplements.

4. Marked interference with psychosocial functioning.

- B. The disturbance is not better explained by lack of available food or by an associated culturally sanctioned practice.
- C. The eating disturbance does not occur exclusively during the course of anorexia nervosa or bulimia nervosa, and there is no evidence of a disturbance in the way in which one's body weight or shape is experienced.
- D. The eating disturbance is not attributable to a concurrent medical condition or not better explained by another mental disorder. When the eating disturbance occurs in the context of another condition or disorder, the severity of the eating disturbance exceeds that routinely associated with the condition or disorder and warrants additional clinical attention.

Anorexia Nervosa

- A. Restriction of energy intake relative to requirements, leading to a significantly low body weight in the context of age, sex, developmental trajectory, and physical health. Significantly low weight is defined as a weight that is less than minimally normal or, for children and adolescents, less than minimally expected.
- B. Intense fear of gaining weight or of becoming fat, or persistent behaviour that interferes with weight gain, even though at a significantly low weight.
- C. Disturbance in the way in which one's body weight or shape is experienced, undue influence of body weight or shape on self-evaluation, or persistent lack of recognition of the seriousness of the current low body weight.

Specify whether:

Restricting type: During the last three months, the individual has not engaged in recurrent episodes of binge eating or purging behaviour (i.e. self-induced vomiting, or the misuse of laxatives, diuretics, or enemas). This subtype describes presentations in which weight loss is accomplished primarily through dieting, fasting and/or excessive exercise.

Binge-eating/purging type: During the last three months the individual has engaged in recurrent episodes of binge eating or purging behaviour (i.e. self-induced vomiting, or the misuse of laxatives, diuretics, or enemas).

Specify current severity:

Mild: BMI more than 17

Moderate: BMI 16- 16.99

Severe: BMI 15-15.99

Extreme: BMI less than 15

Bulimia Nervosa

- A. Recurrent episodes of binge eating. An episode of binge eating is characterized by both:
 - 1. Eating in a discrete period of time (e.g. within any 2-hour period), an amount of food that is definitely larger than what most individuals would eat in a similar period of time under similar circumstances.
 - 2. A sense of lack of control over eating during the episodes (e.g. a feeling that one cannot stop eating or control what or how much one is eating).
- B. Recurrent inappropriate compensatory behaviors to prevent weight gain, such as self-induced vomiting; misuse of laxatives, diuretics, or other medications; fasting; or excessive exercise.
- C. The binge eating and inappropriate compensatory behaviors both occur, on average, at least once a week for 3 months.
- D. Self-evaluation is unduly influenced by body shape and weight.
- E. The disturbance does not occur exclusively during episodes of anorexia nervosa.

Specify current severity:

Mild: An average of 1-3 episodes of inappropriate compensatory behaviours per week. **Moderate:** An average of 4-7 episodes of inappropriate compensatory behaviours per week.

Severe: An average of 8-13 episodes of inappropriate compensatory behaviours per week.

Extreme: An average of 14 or more episodes of inappropriate compensatory behaviours per week.

Binge-Eating Disorder

- A. Recurrent episodes of binge eating. An episode of binge eating is characterized by both:
 - 1. Eating in a discrete period of time (e.g. within any 2-hour period), an amount of food that is definitely larger than what most individuals would eat in a similar period of time under similar circumstances;
 - 2. A sense of lack of control over eating during the episodes (e.g. a feeling that one cannot stop eating or control what or how much one is eating).
- B. Binge eating episodes are associated with three or more of the following:
 - 1. Eating much more rapidly than normal.

2. Eating until feeling uncomfortably full.
 3. Eating large amounts of food when not feeling physically hungry.
 4. Eating alone because of feeling embarrassed by how much one is eating.
 5. Feeling disgusted with oneself, depressed, or very guilty afterwards.
- C. Marked distress regarding binge eating is present.

D. The binge eating occurs, on average, at least once a week for 3 months.

E. The binge eating is not associated with the recurrent use of inappropriate compensatory behavior as in bulimia nervosa and does not occur exclusively during the course of bulimia nervosa or anorexia nervosa.

Specify current severity:

Mild: 1-3 binge eating episodes per week.

Moderate: 4-7 binge eating episodes per week.

Severe: 8-13 binge eating episodes per week.

Extreme: 14 or more binge eating episodes per week.

Other Specified Feeding or Eating Disorder

- Symptoms characteristic of a feeding or eating disorder that cause clinical distress or impairment in social, occupational, or other important areas of functioning predominate.
- However, DO NOT meet the full criteria for any of the disorders in the feeding and eating disorders diagnostic class.
- This category can also be used in situations to communicate the specific reason the presentation does not meet the criteria for a specific eating disorder.
- This is done by recording “other specified feeding or eating disorder” followed by the specific reason e.g. “bulimia nervosa- low frequency”.

Examples:

1. **Atypical Anorexia Nervosa:** all of the criteria for anorexia nervosa are met, except that despite significant weight loss, the individual’s weight is within or above the normal range.
2. **Bulimia Nervosa (of low frequency and/or limited duration):** all of the criteria for bulimia nervosa are met, except that the binge eating and inappropriate compensatory behaviors occur, on average, less than once a week and/ or for less than 3 months.

3. **Binge-eating disorder (of low frequency and/or limited duration):** all of the criteria for binge-eating disorder are met, except that the binge occurs, on average, less than once a week and/ or for less than 3 months.
4. **Purging disorder:** recurrent purging behavior to influence weight or shape (e.g. self-induced vomiting; misuse of laxatives, diuretics, or other medications) in the absence of binge eating.
5. **Night eating syndrome:** Recurrent episodes of night eating, as manifested by eating after awakening from sleep or by excessive food consumption after the evening meal. There is awareness of recall of the eating. The night eating is not better explained by external influences such as changes in the individual's sleepwake cycle or by local social norms. The night eating causes significant distress and/or impairment in functioning. The disordered pattern of eating is not better explained by binge-eating disorder and or another mental disorder, including substance use, and is not attributable to another medical disorder or to an effect of medication.

Unspecified Feeding or Eating Disorder

- Symptoms characteristic of a feeding and eating disorder & cause clinical significant distress or impairment in social, occupational, or other important areas of functioning predominate.
- However, DO NOT meet the full criteria for any of the disorders in the feeding and eating disorders diagnostic class.
- Used when the clinician chooses not to specify the reason that criteria are not met for a specific feeding and eating disorder.
- This includes times when there is insufficient information to make a more specific diagnosis (e.g. in emergency room setting).

For further information please refer to: <http://www.dsm5.org/>

Appendix 2

EATING DISORDER SERVICES - OUTER EAST METROPOLITAN MELBOURNE

How to use this document

This document outlines available services for people in Outer East Metropolitan Melbourne requiring treatment and support for eating disorders and related mental health issues. This document has been designed for professionals, and may be used by allied health clinicians, school welfare staff, medical professionals, and others in a similar role.

To use this document effectively, it is recommended that you:

Use the Glossary on pages 2-5 to determine the relevant diagnostic category.

See the summary on page 6 to get an overview of eating disorders services by age group, diagnosis, and severity.

Explore details of the appropriate services on pages 7-14, which list eligibility criteria, service information, contact details and referral methods.

This document has been developed by the following organisations:



SUMMARY - OUTER EAST METROPOLITAN MELBOURNE EATING DISORDER SERVICES

	Mild e.g. Disordered Eating	Moderate e.g. BN (medically stable), BED & OSFED with low medical risk, no co-morbidities	Severe e.g. AN; AN like OSFED, AAN, ARFID; BN or BED with ≥ moderate medical or psychiatric risk; ED where other approaches have been unsuccessful			
				Community Treatment	Day Program	Inpatient Care
Age: <18	GP, consider Paediatric referral Involve parents Self-help, books & online Body Image Programs Counselling School Welfare Community Health/Private Dietitian Support Groups Eating Disorders Helpline	GP + Paediatrician Involve parents Mental Health interventions e.g. Headspace, Inspiro, Yarra Ranges Youth Services, EACH, EMMML, ATAPS, Eating Disorders Victoria Community Health Dietitian/Private Dietitian Support Groups Eating Disorders Helpline	Mental Health	Child & Youth Mental Health Service (CYMHS) includes: ED Integrated Assessment Clinic (Paediatrics, Mental Health, Dietetics) Case management and treatment: FBT, CBTE, AFT, SSCM, IPT via community team clinics* * + referral to dietetics as indicated	Southern Health Wellness & Recovery Program (SHWRC) Butterfly Day Program (12 – 24yo)	Adolescent acute psychiatric unit Statewide Child acute psychiatric unit
			Medical	GP and Paediatrician Outpatient paediatric = eating disorders clinic, Box Hill Hospital (limited capacity only - follow up of		Box Hill Paediatric Unit eligibility criteria: Aged < 18 years Heart rate < 55 beats per minute (If < 45 bpm awake, may need transfer to a Tertiary Paediatric Unit)

				complex clients referred from Box Hill Paediatric Inpatient Unit)		Blood pressure, 80 mmHg systolic Postural hypotension 20 mmHG lying to standing Postural tachycardia 20 bpm lying to standing Hypothermia temperature < 35°C Electrolyte abnormalities Dehydration
Age: 18 – 24	GP Self-help, books & online Body Image Programs Counselling School Welfare Community Health/Private Dietitian Support Groups Eating Disorders Helpline	GP + Paediatrician Involve parents Mental Health interventions e.g Headspace, Inspiro, Yarra Ranges Youth Services, EACH, EMMML, ATAPS, Eating Disorders Victoria Community Health Dietitian/Private Dietitian Support Groups Eating Disorders Helpline	Mental Health	Child & Youth MH Service (CYMHS): ED Integrated Assessment Clinic (Paediatrics, Mental Health and Dietetics) Case management and treatments including FBT, CBTE, AFT, SSCM, IPT via local community team clinics* * + referral to dietetics as indicated - BETRS Outpatient	BETRS Day Program Southern Health Wellness & Recovery Program (SHWRC) Butterfly Day Program (12 – 24yo)	BETRS Inpatient eating disorders Unit EH Inpatient psychiatric unit
			Medical	- GP		BETRS Inpatient eating disorders Unit

						EH medical Inpatient unit
Age: 25 +	GP Self-help, books & online Body Image Programs Counselling School Welfare Community Health/Private Dietitian Support Groups Eating Disorders Helpline	GP + Paediatrician Involve parents Mental Health interventions e.g Headspace, Inspiro, Yarra Ranges Youth Services, EACH, EMMML, ATAPS, Eating Disorders Victoria Community Health Dietitian/Private Dietitian Support Groups Eating Disorders Helpline	Mental Health	Eastern Health Adult Mental Health + / or BETRS Specialist ED Service (Assessment & Treatment Planning Service)	BETRS Day Program	BETRS Inpatient eating disorders Unit EH Inpatient psychiatric unit
			Medical	GP		BETRS Inpatient eating disorders Unit EH Medical Inpatient unit

Glossary of Terms and Diagnostic Categories

For the purposes of this document, eating disorders and related issues can be broadly categorised as Mild, Moderate or Severe. Note this classification system is not universally used and has been created to facilitate ease of use in identifying appropriate care pathway for professionals who may be less familiar with treatment options for eating disorders.

MILD ZONE

Disordered Eating

Disordered eating refers to a wide range of abnormal eating behaviours, such as chronic restrained eating, compulsive eating and habitual dieting. Disordered eating includes irregular, chaotic eating patterns which may reflect some but not all symptoms of recognised eating disorders, such as Anorexia Nervosa or Bulimia Nervosa. Behaviours or relationships with food which are obsessive, irregular or chaotic may fall under the category of disordered eating when they cause a level of discomfort or disruption to a person's life. Disordered eating negatively impacts a person's emotional, social, and physical wellbeing. While a behavioural pattern may not fall under a specified category of eating disorder, does not mean it cannot have a widespread and destructive impact on a person's life. Disordered eating patterns may lead to fatigue, depression, malnutrition, or decreased concentration, depending on the nature of the behaviour.

MODERATE ZONE

Bulimia Nervosa

According to DSM-5 criteria, to be diagnosed as having Bulimia Nervosa a person must display:

Recurrent episodes of binge eating. An episode of binge eating is characterised by both of the following:

Eating, in a discrete period of time (e.g. within any 2-hour period), an amount of food that is definitely larger than most people would eat during a similar period of time and under similar circumstances.

A sense of lack of control overeating during the episode (e.g. a feeling that one cannot stop eating or control what or how much one is eating).

Recurrent inappropriate compensatory behaviour in order to prevent weight gain, such as self-induced vomiting, misuse of laxatives, diuretics, or other medications, fasting, or excessive exercise.

The binge eating and inappropriate compensatory behaviours both occur, on average, at least once a week for three months.

Self-evaluation is unduly influenced by body shape and weight.

The disturbance does not occur exclusively during episodes of Anorexia Nervosa.

Binge Eating Disorder

According to the DSM-5 criteria, to be diagnosed as having Binge Eating Disorder a person must display:

Recurrent episodes of binge eating. An episode of binge eating is characterised by both of the following:

Eating, in a discrete period of time (e.g. within any 2-hour period), an amount of food that is definitely larger than most people would eat during a similar period of time and under similar circumstances.

A sense of lack of control overeating during the episode (e.g. a feeling that one cannot stop eating or control what or how much one is eating).

The binge eating episodes are associated with three or more of the following:

eating much more rapidly than normal

eating until feeling uncomfortably full

eating large amounts of food when not feeling physically hungry

eating alone because of feeling embarrassed by how much one is eating

feeling disgusted with oneself, depressed or very guilty afterward

Marked distress regarding binge eating is present

Binge eating occurs, on average, at least once a week for three months

Binge eating not associated with the recurrent use of inappropriate compensatory behaviours as in Bulimia Nervosa and does not occur exclusively during the course of Bulimia Nervosa, or Anorexia Nervosa methods to compensate for overeating, such as self-induced vomiting.

Note: Binge Eating Disorder is less common but much more severe than overeating. Binge Eating Disorder is associated with more subjective distress regarding the eating behaviour, and commonly other co-occurring psychological problems.

Other Specified Feeding or Eating Disorder (OSFED) (not AN like)

According to the DSM-5 criteria, to be diagnosed as having OSFED a person must present with a feeding or eating behaviours that cause clinically significant distress and impairment in areas of functioning, but do not meet the full criteria for any of the other feeding and eating disorders.

A diagnosis might then be allocated that specifies a specific reason why the presentation does not meet the specifics of another disorder (e.g. Bulimia Nervosa - low frequency). The following are further examples for OSFED:

Binge Eating Disorder (of low frequency and/or limited duration): All of the criteria for BED are met, except at a lower frequency and/or for less than three months.

Bulimia Nervosa (of low frequency and/or limited duration): All of the criteria for Bulimia Nervosa are met, except that the binge eating and inappropriate compensatory behaviour occurs at a lower frequency and/or for less than three months.

Purging Disorder: Recurrent purging behaviour to influence weight or shape in the absence of binge eating

Night Eating Syndrome: Recurrent episodes of night eating. Eating after awakening from sleep, or by excessive food consumption after the evening meal. The behavior is not better explained by environmental influences or social norms. The behavior causes significant distress/impairment. The behavior is not better explained by another mental health disorder (e.g. BED).

Unspecified Feeding or Eating Disorder (UFED)

According to the DSM-5 criteria this category applies to where behaviours cause clinically significant distress/impairment of functioning, but do not meet the full criteria of any of the Feeding or Eating Disorder criteria. This category may be used by clinicians where a clinician chooses not to specify why criteria are not met, including presentations where there may be insufficient information to make a more specific diagnosis (e.g. in emergency room settings).

SEVERE ZONE

Anorexia Nervosa

According to the DSM-5 criteria, to be diagnosed as having Anorexia Nervosa a person must display:

Persistent restriction of energy intake leading to significantly low body weight (in context of expectations for age, sex, developmental trajectory, physical health).

Either an intense fear of gaining weight or of becoming fat, or persistent behaviour that interferes with weight gain (even though significantly low weight).

Disturbance in the way one's body weight or shape is experienced, undue influence of body shape and weight on self-evaluation, or persistent lack of recognition of the seriousness of the current low body weight.

Subtypes:

Restricting type

Binge-eating/purging type

Avoidant/Restrictive Food Intake Disorder (ARFID)

According to the DSM-5 criteria, to be diagnosed as having ARFID a person must display:

An Eating or Feeding disturbance as manifested by persistent failure to meet appropriate nutritional and/or energy needs associated with one (or more) of the following:

1. Significant loss of weight (or failure to achieve expected weight gain or faltering growth in children) 2. Significant nutritional deficiency

Dependence on enteral feeding or oral nutritional supplements

Marked interference with psychosocial functioning

The behaviour is not better explained by lack of available food or by an associated culturally sanctioned practice.

The behaviour does not occur exclusively during the course of Anorexia Nervosa or Bulimia Nervosa, and there is no evidence of a disturbance in the way one's body weight or shape is experienced.

The eating disturbance is not attributed to a medical condition, or better explained by another mental health disorder. When it does occur in the presence of another condition/disorder, the behaviour exceeds what is usually associated, and warrants additional clinical attention.

Other Specified Feeding or Eating Disorder (OSFED) (with AN features)

According to the DSM-5 criteria, to be diagnosed as having OSFED a person must present with a feeding or eating behaviours that cause clinically significant distress and impairment in areas of functioning, but do not meet the full criteria for any of the other feeding and eating disorders. A diagnosis might then be allocated that specifies a specific reason why the presentation does not meet the specifics of another disorder (e.g. Bulimia Nervosa- low frequency). The following are further examples for OSFED:

- Atypical Anorexia Nervosa: All criteria are met, except despite significant weight loss, the individual's weight is within or above the normal range.

Bulimia Nervosa – severe

Moderate medical risk, daily compensatory behaviours

Binge Eating Disorder – severe

Moderate medical risk, daily compensatory behaviours

SERVICE DETAILS - OUTER EAST METROPOLITAN MELBOURNE EATING DISORDER SERVICES

Name of agency	Catchment	Services	Inclusion criteria	Exclusion criteria	Contact, referral & costs
MILD					
BEARS (Body Embracing Acceptance n Real Self) (Lilydale)	N/A, must be able to travel to clinic	8-week preventative program for young people and their parents	12-16 yo (Grade 7-12)	Diagnosed eating disorder	Ph: 9801 6088 GP referral needed No cost
Dietitians - private	N/A	Provide nutritional assessment, eating plans, nutrition education. Support young people and parents/carers in weight restoration (meal planning) and working towards normal eating	Requires regular GP review and involvement and a mental health clinician	Some dietitians will not work with eating disorders due to inexperience or complexity	GP referral ('allied health team care arrangement'). Fees vary, Medicare rebates available.
Eastern Health Angliss Dietitians (Angliss Hospital)	Knox, Yarra Ranges (or others willing to travel)	Community Health Dietetics	All ages, all ED presentations. Must be clinically stable & willing to link in with medical & mental health support	Unmotivated to change. If patients require intensive intervention (e.g. weekly), encourage them to see private dietitian	Ph: 9764 6229 Low cost (appointments limited)

Eastern Health Yarra Valley CH dietitians (Healesville, Yarra Junction)	Rural regions of Yarra Ranges (north east of Coldstream and Seville). Includes Yarra Glen, Healesville, Yarra Junction and surrounds	Dietetics including meal planning and liaising with other professionals. Can do shopping tours, cooking, creating safe eating environments, promoting healthy body image and healthy eating	All ages, all ED presentations. Must be clinically stable & willing to link in with medical & mental health support	Unmotivated to change. If patients require intensive intervention (ie weekly), encourage them to see private dietitian	Ph: 1300 130 381 Accept self-referral and GP referral Low cost (Community Health Fees) Prioritise disadvantaged families
Eating Disorders Victoria (Abbotsford)	N/A	Information, support, resources, communitybased psychological	All ages, all ED presentations. Must be clinically	N/A	Ph: 1300 550 236 E: help@eatingdisorders.org.au Most services free or low-cost

Name of agency	Catchment	Services	Inclusion criteria	Exclusion criteria	Contact, referral & costs
		treatment, referral, support groups	stable & willing to link in with medical & MH support		Medicare rebates available for therapy (with GP referral)
GP	N/A	Identification, referral, ongoing management	N/A	N/A	Fees vary
Inspiro CHS dietitians (Lilydale)	N/A, must be able to travel to clinic	Dietetics including meal planning	Required regular GP involvement/review and mental health	Medically unstable	Ph: 9738 8801 Low cost

			clinician		
National Eating Disorders Collaboration (online)	N/A	Resources, referral	N/A	N/A	www.nedc.com.au
School welfare team	N/A	Initial identification and referral	School aged young people	N/A	N/A
MODERATE					
Dietitians - private	N/A	Provide nutritional assessment, eating plans, education. Support young people & parents/carers in weight restoration (meal planning) and working towards normal eating	Requires regular GP review and involvement and a mental health clinician	Some dietitians will not work with eating disorders due to inexperience or complexity	GP referral ('allied health team care arrangement'). Fees vary, Medicare rebates available.
EACH (Eastern Access Community Health) Youth & Family Services (Ringwood)	N/A Must be able to travel to clinic	Youth Clinic Early intervention & counselling		Young people requiring intensive mental health support and case management	Ph: 9871 1800 E: youthandfamilyvic@each.com.au Centre-based (may offer outreach depending on specialist team referred to)

EACH (Eastern Access Community Health) Youth Clinic (Ringwood)	N/A Must be able to travel to clinic	Youth medical clinic	GP clinic for YP 12-25 years– will see any young person willing to attend for medical monitoring		Ph: 9871 1800
Eastern Health Angliss	Knox, Yarra	Community Health	All ages, all ED	Unmotivated to	Ph: 9764 6229

Name of agency	Catchment	Services	Inclusion criteria	Exclusion criteria	Contact, referral & costs
Dietitians (Angliss Hospital)	Ranges (or others willing to travel)	Dietetics	presentations. Must be clinically stable & willing to link in with medical & mental health support	change. If patients require intensive intervention (ie weekly), encourage them to see private dietitian	Low cost (appointments are limited)
Eastern Health Yarra Valley CH dietitians (Healesville, Yarra Junction)	Rural regions of Yarra Ranges (north east of Coldstream and Seville). Includes Yarra Glen, Healesville, Yarra Junction and surrounds	Dietetics including meal planning and liaising with other professionals. Can do shopping tours, cooking, creating safe eating environments, promoting healthy body image and healthy eating	All ages, all ED presentations. Must be clinically stable & willing to link in with medical & mental health support	Unmotivated to change. If patients require intensive intervention (ie weekly), encourage them to see private dietitian	Ph: 1300 130 381 Accepts self-referral and GP referral Low cost (Community Health Fees) Prioritise disadvantaged families

Eating Disorders Victoria (EDV) (Abbotsford)	N/A	Information, support, resources, communitybased psychological treatment, referral, support groups	All ages, all ED presentations. Must be clinically stable & willing to link in with medical & mental health support	N/A	Ph:1300 550 236 E: help@eatingdisorders.org.au Most services free or low-cost Medicare rebates available for therapy (with GP referral)
GP	N/A	Identification, referral, ongoing management	N/A	N/A	Fees vary
Headspace ATAPS or Mental Health Nurse (Yarra Ranges Youth Services, Lilydale)	N/A	ATAPS (12 Allied Health sessions) Mental Health Nurse	Disadvantaged or under 25yrs, severe mental illness	Cannot receive ATAPS if receiving Better Access in same year Mental health nurses unable to see CYMHS Clients	Headspace Intake (assessment can be by phone and in Lilydale)
Headspace Knox Intake (Westfield Knox Ozone)	Contact service for details	Triage, assessment and referral	12-25yrs	Anorexia Nervosa, Atypical AN, ARFID, severe BN or BED	Ph: 9801 6088 E: info@headspaceknox.com.au Walk-in service GPs refer via EMML Access &

Name of agency	Catchment	Services	Inclusion criteria	Exclusion criteria	Contact, referral & costs
					Referral Centre
Inspiro CHS counsellors (Lilydale)	N/A	Counselling (unlimited sessions)	N/A	N/A	Ph: 9738 8801 No cost
Inspiro CHS dietitians (Lilydale)	N/A, must be able to travel to clinic	Dietetics including meal planning	Requires regular GP involvement/review and mental health clinician	Medically unstable	Ph: 9738 8801 <18 years free >18 years low cost
Inspiro Youth Health Clinic (Lilydale & Belgrave)	Live in Yarra Ranges	Community Health Nurse assessment and referral	13-25 Any health issue		Ph: 9738 8801 Walk-ins welcome
Medicare Local, Eastern Melbourne (EMML) (Knox)	Yarra Ranges, Knox, Maroondah	Child Mental Health Service, ATAPS (12 sessions), Mental Health Nurse	0-11 yrs, Disadvantaged or under 25yrs, severe mental illness	Can't receive ATAPS if receiving Better Access in same year, MH nurses unable to see CYMHS clients	Ph: 9871 1000 No cost
Yarra Ranges Council Youth Services counselling (Lilydale, Yarra Junction, Healesville, Belgrave)	Live, work or study in Shire of Yarra Ranges	Counselling for young people and families 12 - 25 years			Ph: 9294 6716
SEVERE					

BETRS (Body Image Eating Disorders Treatment & Recovery Service) (Kew & Austin Hospital)	North-east metro and regional areas of Victoria	Intake Service, Assessment & Treatment Planning Interventions: Family sessions CBT-E Day program (DPP) -Outpatient program Inpatient service	18+ Treatment options dependent on outcome of assessment	Treatment options dependent on outcome of assessment	Ph: 9854 1718 (9.30-11.30am) E: betrs@svhm.org.au Self-referral accepted following discussion with health professional, referrals accepted from GPs. Inpatient admissions arranged via BETRS Intake Service

Name of agency	Catchment	Services	Inclusion criteria	Exclusion criteria	Contact, referral & costs
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Eastern Health: Child & Youth Mental Health Service (CYMHS) (Lilydale, Upper Ferntree Gully, Ringwood, Box Hill) Eastern Health: Paediatric Unit Eating Disorders Paediatric Outpatient Clinic Assessment Clinic	Maroondah, Knox, Yarra Ranges, Manningham, Whitehorse and Monash (except for southwest corner) (Local Government Areas)	Triage & referral, integrated mental health, paediatric & dietetic assessment, case management & treatment (FBT, CBT-E, AFP, SSCM, IPT). Shared care with Paediatrician/GP and/or EH Paediatric Ward, medical wards or BETRS. Paediatric ED outpatient clinic: limited service only for review of complex patients discharged from Paediatric Unit. Paediatric Unit: 4 designated ED beds for acute medical/psychiatric instability.	0-24yrs. AN, Atypical AN, Avoidant /restrictive food intake disorder (ARFID), severe BN, BED or Purging disorder, other EDs where co-morbidity meets CYMHS criteria. Paediatric Unit admission criteria: < 18 years Heart rate < 55 beats per minute** Blood pressure, 80 mmHg systolic - Postural hypotension 20 mmHG from lying to standing Postural tachycardia 20 beats per minute from lying to standing	Mild to moderate BN, BED or purging disorders	CYMHS Access team Ph: 1300 721 927 (option 2) No cost Box Hill Paediatric Unit Box Hill Hospital Emergency Department Phone: 9895 3560 – GP use only Fax: (03) 9895 4828 Advice: To seek advice, call the switchboard on 1300 342 255 and ask for the relevant oncall registrar, or consultant.
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		Secondary consultation and training.	Hypothermia temperature < 35°C Electrolyte abnormalities Dehydration ** Patients with heart rate < 45 bpm awake may need transfer from Eastern Health Emergency Department to a Tertiary Paediatric Unit		
Monash Health Butterfly Eating Disorder Day Program (Clayton)	Priority to Southern Health region referrals.	Day Program	18yrs+, Eating or body image problem	BMI <14	Ph: 9568 4785 Initial phone referrals by MH clinician.

	Long waiting list if	Group therapy		Medically unstable, unmotivated to change/attend	MH Clinician to complete referral
Name of agency	Catchment	Services	Inclusion criteria	Exclusion criteria	Contact, referral & costs
	not in Southern Health catchment.	Family therapy Dietetic support	DPP: Low BMI, motivated to restore health and change behaviours Inpatient program: Needs medical rescue or actively seeking IP care to assist with recovery		documentation
GP	N/A	Identification, referral, ongoing management	N/A	N/A	Fees vary
Medical Inpatients (Maroondah Hospital)	Resident of Yarra Ranges, Maroondah, or Knox City Council	Inpatient service	Over 18 yrs with medical instability	If stable and motivated should go to BETRS Unit at Austin	Referral via Emergency Departments
Paediatricians – Private	N/A	Ongoing management	N/A	N/A	Fees vary GP referral necessary
MENTAL HEALTH SECONDARY CONSULTATION, EDUCATION & SERVICE DEVELOPMENT					

CEED (Victorian Centre for Excellence in Eating Disorders) (Parkville)	N/A	Secondary clinical consultation to public MH and other services, training for health professionals, service development support, online resources			Info: 8387 2673 Consultation: 8387 2669 Free or subsidised
Eating Disorders Victoria (Abbotsford)	N/A	Education and training for teaching staff, students, community members, health professionals	N/A	N/A	Ph: 1300 550 236 E: help@eatingdisorders.org.au

Appendix 3 Melbourne Metro Services

< 18yo				
Local Govt Area	MH Catchment	Associated Specialist MH ED Service	MH Triage Contact	Paediatric acute medical care
Moreland	AN – RCH Eating Disorders Program (RCH-EDP) Other EDs:		RCH-EDP Clinical Nurse Consultants: 03 9345 6533 (M-F: 9 – 5) NW Metro Psychiatric Triage: 1800 445 511 OYH Youth Assessment Team Triage Service: 1800 888 320	RCH Adolescent Medicine Unit Clinical Nurse Consultants -Stephanie Campbell / Ellie Studd. Ph 9345 6533
Melbourne	< 15 yo - RCH CAMHS 15+ - Orygen Youth Health			
Darebin	Ne Metro (Austin) CAMHS (Heidelberg)		North East Triage Service: 1300 859 789 Child & Adolescent Mental Health Services - Community: 03 9496 3620	Austin Paediatric Unit ED Liaison Nurses - Brialie Forster / Karen Stewart. Ph: 9496 5515
Banyule				
Yarra				
Booroondara	Eastern Health CYMHS (Box Hill, Ringwood, Lilydale, Ferntree Gully)		Eastern Health Mental Health Triage: 1300 721 927	Box Hill Paediatric Unit ED Coordinator Nurse - Samantha O'Donnell. Ph: 0432 850 100
Manningham				
Whitehorse				
Monash-Mulgrave				
Monash – Oakleigh, Clayton	Early In Life MH (ELMHS) (Monash CAMHS) MMC Clayton	Monash Wellness & Recovery Service • Butterfly Day Program – Chadstone (12 – 24yrs)	Monash Health ELMHS Triage: 03 9594 1300 Monash Health Psychiatric Triage Service: 1300 369 012	Monash Adolescent Medicine Unit ED Unit Nurse Consultant - Michelle Caughey. Ph: 9594 4642
Stonnington	Inner & Middle South (Alfred) CYMHS (Moorabbin)		Alfred CYMHS: 03 8552 0555 Emergency Psychiatry After Hours: Inner South: Port Philip, Stonnington & Glen Eira, (North of North Rd) - 1300 363 746	
Glen Eira				
Port Phillip			Middle South: Glen Eira (South of North Rd) Bayside, Kingston (West of Boundary Rd) - 1300 369 012	

18 – 24yo				
Local Govt Area	MH Catchment	Associated Specialist MH ED Service	MH Triage Contact	acute medical care
Moreland	NorthWestern MH (North West) or Orygen YH	RMH ED Program - Inpt beds - Day Program	OYH Youth Assessment Team Triage Service: 1800 888 320	Local acute hospital
Melbourne	NorthWestern MH (Inner West) or Orygen YH		NWMH Psychiatric Triage: 1300 874 243 Eating Disorders Program RMH: 03 9342 4033	
Darebin	NorthWestern MH (Northern)	BETRS EDP (Austin-St Vincent’s) - Assessment & O/P Service – Kew - Day program – Kew - Inpatient beds – Austin Heidelberg	NWMH Psychiatric Triage: 1300 874 243 BETRS Intake: 03 9231 5718 (M-F: 9.30 – 11.30)	
Banyule	North East Metro –Austin AMHS		NE Metro psychiatric Triage: 1300 859 789 BETRS Intake: 03 9231 5718 (M-F: 9.30 – 11.30)	
Yarra	Inner Urban East – St Vincent’s MH		St Vincent’s MHS Psychiatric Triage: 1300 558 862 BETRS Intake: 03 9231 5718 (M-F: 9.30 – 11.30)	
Booroondara				
Manningham	Eastern Health CYMHS		Eastern Health Mental Health Triage: 1300 721 927 BETRS Intake: 03 9231 5718 (M-F: 9.30 – 11.30)	
Whitehorse	(Box Hill, Ringwood, Lilydale, Ferntree Gully)			
Monash - Mulgrave				
Monash – Oakleigh, Clayton	Middle South – Monash AMHS	Monash Wellness & Recovery Service - Outpatient program MMC Clayton - Butterfly Day Program – Chadstone (12 – 24yrs) - Inpatient ED beds - Dandenong	(B/H) Wellness & Recovery Centre Intake (reception): 03 9594 1770 (A/H) Monash Health Psychiatric Triage: 1300 369 012	

25yo+				
Local Govt Area	MH Catchment	Associated ED Service	MH Triage Contact	acute medical care
Moreland	NorthWestern MH (North West)	RMH ED Program - Inpt beds - Day Program	NWMH Psychiatric Triage: 1300 874 243 Eating Disorders Program RMH: 03 9342 4033	Local acute hospital
Melbourne	NorthWestern MH (Inner West)			
Darebin	NorthWestern MH (Northern)	BETRS EDP (Austin-St Vincents) - Assessment & O/P Service – Kew - Day program – Kew - Inpatient beds – Austin Heidelberg	NWMH Psychiatric Triage: 1300 874 243 BETRS Intake: 03 9231 5718 (M-F: 9.30 – 11.30)	
Banyule	North East Metro –Austin AMHS		NWMH Psychiatric Triage: 1300 874 243 BETRS Intake: 03 9231 5718 (M-F: 9.30 – 11.30)	
Yarra	Inner Urban East – St Vincent’s MH		St Vincent’s MHS Psychiatric Triage: 1300 558 862 BETRS Intake: 03 9231 5718 (M-F: 9.30 – 11.30)	
Booroondara				
Manningham	Eastern Health AMHS		Eastern Health Mental Health Triage: 1300 721 927 BETRS Intake: 03 9231 5718 (M-F: 9.30 – 11.30)	
Whitehorse	(Box Hill, Ringwood, Lilydale, Ferntree Gully)			
Monash - Mulgrave				
Monash – Oakleigh, Clayton	Middle South – Monash AMHS	Monash Wellness & Recovery Service - Outpatient Program MMC Clayton - Inpatient ED beds - Dandenong	(B/H) Wellness & Recovery Centre Intake (reception): 03 9594 1770 (A/H) Monash Health Psychiatric Triage: 1300 369 012	
Stonnington	Inner South East – Alfred AMHS		Alfred Psychiatric Triage: 1300 363 746 Wellness & Recovery Centre Intake (reception): 03 9594 1770	



Appendix 4

03 May 2017

A/Prof L.A. Sanci

General Practice

The University of Melbourne

Dear A/Prof Sanci

I am pleased to advise that the General Practice Human Ethics Advisory Group has approved the following Minimal Risk Project.

Project title: **Can a One hour online educational intervention improve the detection and management of patients with Eating Disorders by General Practice Trainees?**

Researchers: **A/Prof L A Sanci, Dr S K Davidson, J Conway**

Ethics ID: **1648419**

The Project has been approved for the period: **03-May-2017 to 31-Dec-2017.**

It is your responsibility to ensure that all people associated with the Project are made aware of what has actually been approved.

Research projects are normally approved to 31 December of the year of approval. Projects may be renewed yearly for up to a total of five years upon receipt of a satisfactory annual report. If a project is to continue beyond five years a new application will normally need to be submitted.

Please note that the following conditions apply to your approval. Failure to abide by these conditions may result in suspension or discontinuation of approval and/or disciplinary action.

- (a) **Limit of Approval:** Approval is limited strictly to the research as submitted in your Project application.
- (b) **Amendments to Project:** Any subsequent variations or modifications you might wish to make to the Project must be notified formally to the Human Ethics Advisory Group for further consideration and approval before the revised Project can commence. If the Human Ethics Advisory Group considers that the proposed amendments are significant, you may be required to submit a new application for approval of the revised Project.

- (c) **Incidents or adverse affects:** Researchers must report immediately to the Advisory Group and the relevant Sub-Committee anything which might affect the ethical acceptance of the protocol including adverse effects on participants or unforeseen events that might affect continued ethical acceptability of the Project. Failure to do so may result in suspension or cancellation of approval.
- (d) **Monitoring:** All projects are subject to monitoring at any time by the Human Research Ethics Committee.
- (e) **Annual Report:** Please be aware that the Human Research Ethics Committee requires that researchers submit an annual report on each of their projects at the end of the year, or at the conclusion of a project if it continues for less than this time. Failure to submit an annual report will mean that ethics approval will lapse.
- (f) **Auditing:** All projects may be subject to audit by members of the Sub-Committee.

Please quote the ethics registration number and the name of the Project in any future correspondence.

On behalf of the Ethics Committee I wish you well in your research.

Yours sincerely



A/Prof John Furler - Chair

General Practice Human Ethics Advisory Group

Department of General Practice
Melbourne Medical School, Faculty of Medicine, Dentistry and Health Sciences
The University of Melbourne Victoria 3010 Australia

Appendix 5



"Needle in the haystack" GPT2/3 Recruitment survey

1. Welcome to My Survey

Thank you for reading the Plain Language Statement and Consent for our study.

If you wish to be a participant and learn some valuable clinical skills , get some KFP exam practice plus be have the chance to win \$500-read on and answer yes to the following question!

* 1. Do you agree to the above terms?

By clicking Yes, you consent that you are willing to answer the questions in this survey and complete the other required components of the trial.

☐ Yes

☐ No

"Needle in the haystack" GPT2/3 Recruitment survey

2. GPT2/3 Recruitment survey

Dear Doctor

Thank you for responding to the recruitment request for this research project.

This section of the pre-intervention evaluation is to glean information about yourself and your practice. All information will remain confidential

2. What is your gender?

☐ Female ☐ Male

3. What year did you graduate?

4. What is your age?

☐ 18 to 24

☐ 25 to 34

☐ 35 to 44

☐ 45 to 54

* 5. Which Regional Training Provider are you enrolled with ?

6. Which rotation are you completing ?

☐ GPT2 ☐ GPT3

7. Where are you completing your placement?

☐ rural

☐ metro

8. In what languages do you speak fluently?

☐ Arabic

☐ Armenian

☐ Chinese

☐ English

☐ French

☐ French Creole

☐ German

☐ Greek

☐ Gujarati

☐ Hindi

☐ Italian

☐ Japanese

☐ Korean ☐

Persian ☐

Polish

☐ Portuguese

☐ Russian

☐ Spanish

☐ Tagalog

☐ Urdu

☐ Vietnamese

☐ Other (please specify)

9. Do you have any children?

☐ Yes, all 18 or over

☐ Yes, one or more under 18

☐ No

10. Where did you complete your Medical degree?

11. Where have you done your hospital training?-please list all rotations and specific units within each rotation

12. How long have you worked in General Practice?

13. Where did you complete your GPT1 placement?

☐ metro

☐ rural

14. What type of practice do you work in?

☐ Bu k billing

☐ Mixed billing

☐ Extended hours

☐ Group

☐ Community Health Centre

☐ Other (please specify)

15. How many hours per week are you consulting in General Practice?

☐ <12 hours

☐ 13-24 hours

☐ 25-38 hours

☐ >38 hours

16. How many patients per week do you personally consult with in General Practice?

- ☐ <50
- ☐ 51-100
- ☐ 101-150
- ☐ 151-200
- ☐ 201-250
- ☐ >250

17. How many patients are booked per hour?

- ☐ <4
- ☐ 4-5
- ☐ 6 or more

18. Please list any learning activities you have undertaken in the last 4 months and where they were completed e.g. online, conference etc

19. How satisfied are you in the amount of training you received as a medical student in youth and young adult health issues?

very unsatisfied unsatisfied equivical satisfied very satisfied

20. How confident are you diagnosing and managing health issues in the youth and young adult patient populations?

not confident equivical confident very confident

21. How satisfied are you with the postgraduate training you have received in youth and young adult health issues?

very unsatisfied unsatisfied equivical satisfied very satisfied

22. Have you read up on potentially life threatening mental health problems in the past 6 months?

- ☐ yes
- ☐ no

We will now ask you to read the following clinical case and answer the associated series of questions.

James Cassidy, Male 19 years old

Presenting complaint

LACK OF ENERGY AND TROUBLE GETTING A GOOD NIGHT'S SLEEP

Over the last few months James has noticed increasing difficulty with getting to sleep but is also waking up overnight as well. This is causing him problems as he has to get up early as he works as a Tradie. He has to get onsite by 0700 and his company works all over Melbourne which means he sometimes he has to be out the door before 0500 to beat the traffic.

He often sleeps in and this is really starting to annoy him as despite this, he is getting more and more tired. It is also impacting on his work but more importantly for James, on his capacity to perform at footy training and on game day. He drives home to the Yarra Valley and plays in the Seconds now. He was in the seniors but was dropped due to poor form. This has knocked his self-esteem. Training is on Tuesday and Thursday nights back in the Upper Yarra.

In order to get back to sleep, James finds he ends up doing push ups or crunches to wear himself out. He is also carrying a chronic hamstring tear but enjoys exercising and finds it a good way to unwind so just pushes through even though it hurts and does slow him down on.

Past Medical History

Assorted broken bones- wrist, ankle- playing sport, falling off bikes when a kid

Never had surgery

Repeated hamstring injury-he has seen a physio who planned a rehab program for him but as he was told to ease back on his sport and training-, he hasn't bothered to follow it.

23. What questions might be important to ask James to find out more about what his situation is? List , in note form only up to 7(seven)

James tells you that he is a carpentry apprentice and has moved into a share house to be closer to work. He tries to keep fit and eat healthily but gets teased by his mates at work. He has such early starts, the poor sleep is really making him angry and he admits to being a bit of a "hot head" and that has landed him in trouble a few times. He had lost his drivers licence for three months for speeding whilst on P plates and that did not help his mood at all.

He admits to being fed up with the guys teasing him about his size so has started really working out hard at the gym and using protein shakes as well. The gym he goes to has a PT that has even offered him some pills "vitamin" that will make him bulk up faster but he has resisted them so far.

24. What you would specifically look for on examination. List up to 10(ten)

1

2

3

4

5

6

7

8

9

10

25. What investigations will you arrange today for James? List up to 8(eight)

1

2

3

4

5

6

7

8

26. What are the most important features of your management plan while waiting for results? Who else might you involve in his care?

27. What are the most likely differential diagnoses? List up to 3(three).

1

2

3

Thank you very much for completing this survey. In the next phase of the study, you will receive an email link to an online module that we ask be completed within 2 weeks, and that Dr Conway be notified by email when you have completed it.

Six weeks later ,you will receive another survey with KFP style cases and we ask that it be completed and returned within one week.

Thank you in anticipation!

28. What you would specifically look for on examination. List up to 10(ten)

1	
2	
3	
4	
5	
6	
7	
8	
9	
10	

29. What investigations will you arrange today for James? List up to 8(eight)

1	
2	
3	
4	
5	
6	
7	
8	

30. What are the most important features of your management plan while waiting for results? Who else might you involve in his care?

--

31. What are the most likely differential diagnoses? List up to 3(three).

1	
2	
3	

Thank you very much for completing this survey. In the next phase of the study, you will receive an email link to an online module that we ask be completed within 2 weeks, and that Dr Conway be notified by email when you have completed it. Six weeks later ,you will receive another survey with KFP style cases and we ask that it be completed and returned within one week.

Thank you in anticipation!

Thank you for participating in our survey. Please read the following cases and answer the questions.

Case 1. Suzie female age 19

Presenting complaint-

Constipation-requesting laxatives as feeling sick and bloated,

She is having trouble going to the toilet and also wants a certificate as couldn't face going to work as feeling stressed

Has not opened bowels for 3 days- this is a common occurrence and frequently gets abdominal pain and wind +++,often avoids eating as seems to only cause pain, uses over the counter laxatives but they don't seem to be working any longer

She has long standing bowel problems and has tried eliminating certain foods e.g. fats, dairy- this has helped her feel a bit better.She has also been a long term vegetarian and is currently vegan but still constipated so is asking about possibility of coeliac disease-has googled it and thinks she may have it so has cut out all carbohydrates as well.

Feels dizzy-sometimes, usually when exercising,has fainted a few times

Nil reported vomiting

Past Medical History:

Tonsillectomy age 9

Mild asthma and dermatitis since childhood-uses Ventolin when needed

Allergies-nil

Family History

Suzie doesn't know much about her father's family as he moved out when she was 17 and they are estranged

Mother-has had long term anxiety and went "crazy" after the dad left but is a bit better now but still on medication,her Grandmother on Mum's side has been miserable for a slong as Suzie can remeber

She has one younger brother and they get along ok

* 1. What other questions might you ask to find out what might be going on with Suzie?

2. Are there any other specific questions you would like to ask her?

When asked in more detail about her eating, she says she is a vegetarian for religious reasons as is her entire family. Over the last two years since starting her University degree, she has become vegan for ethical reasons. She likes to keep fit and gets quite animated when she reports having lost about 15 kgs in the last year.Since the stomach pains started she has begun to skip meals especially the evening meal to avoid having the pains keep her awake overnight.

3. What might you look for on examination? List, in note form only, up to 10(ten)

1

2

3

4

5

6

7

8

9

10

* 4. What are five likely differential diagnoses. List the MOST likely first.

1

2

3

4

5

5. Which investigations would you order for Suzie? List up to 10(ten) in note form.

1

2

3

4

5

6

7

8

9

10

6. While waiting for the investigation results, how would you further manage this patient? If appropriate, who else might you involve in her care?

- ☐ Arrange to perform a GP Mental Health Plan
- ☐ Psychologist
- ☐ Dietician
- ☐ Local Area Youth Mental Health Service
- ☐ Psychiatrist
- ☐ Mental Health Nurse
- ☐ Gastroenterologist
- ☐ Gynaecologist
- ☐ Other (please specify)

Case 2. Morgan age 15 female

Morgan is a member of one of your families that attend on a regular basis. She has previously attended with minor illnesses and injuries. She presents today with her mother Anna. Morgan is looking uncomfortable.

7. What 2(two) important aspects of this consultation are important to discuss with Morgan and Anna before proceeding?

1

2

Anna explains that Morgan has been unwell with a low grade temperature and pain on urination for the past two days. She has been taking antibiotics, prescribed by another doctor which don't seem to be working.

8. What are the MOST likely differential diagnoses? List in note form only up to 3(three)

1

2

3

You talk with Morgan, and explain that you are going to ask some personal questions. After a brief discussion, Morgan tells you that she has recently become sexually active and has had several sexual partners over the past three months. They have all been male, and around her age. The last encounter was one week ago, prior to the onset of her symptoms. She quietly adds that she has also developed multiple painful sores around her vagina. She is not using any contraception and her last period was three weeks ago.

You gain her consent to undertake an appropriate examination with a chaperone, which confirms your provisional diagnosis.

9. What are the MOST important investigations to arrange today? List, in note form only, up to 4(four)

1

2

3

4

10. While waiting for the results of your investigations, what are the important features of your management plan? List, in note form only, up to 5(five)

1

2

3

4

5

11. What factors are important to discuss when taking a history from any adolescent patient? List, in note form only, up to 7(seven)

1

2

3

4

5

6

7

12. How much of the module did you complete?

0%

25%

50%

75%

100%



13. Prior to participating in this trial, had you already completed this module or any related education?

☐ Yes

☐ No

14. Have you discussed the module with any other GPT Registrars?

☐

y
e
s

☐

n
o

15. If you are willing to be contacted for a follow up phone call/email regarding the ease of use of the module, please complete the following...

Name

Email Address

Phone Number

Many thanks for completing this survey and assisting with the research project. We will be providing feedback to all participants as to their performance once data analysis is completed

Appendix 6

GPimED-online module access information

Department of General Practice and Primary Health Care

Academic Centre



Primary Researcher: Dr Jennifer Conway

Additional Researchers: A/Prof Lena Sanci-Primary Supervisor, Dr Sandra Davidson Co-supervisor

Thank you for completing the initial survey that is part of the GPimED study.

The next step in this project involves participants completing a One-hour online learning module that can be accessed by the following link.

www.racgp.org.au/education/courses/activitylist

Enter activity “Recognising Eating Disorders in General Practice” in the search section and proceed.

Please notify Jennifer Conway by email conwayj@student.unimelb.edu.au when you have completed the module.

4 weeks after notification is received, the final survey will be emailed to you for completion and to be returned within 2 weeks.

Thanks again!



GPimED-online module access information

Department of General Practice and Primary Health Care

Academic Centre

Primary Researcher: Dr Jennifer Conway

Additional Researchers: A/Prof Lena Sanci-Primary Supervisor, Dr Sandra Davidson Co-supervisor

Thank you for completing the initial survey that is part of the GPimED study.

The next step in this project involves participants completing a One-hour online learning module that can be accessed by the following link. www.racgp.org.au/education/courses/activitylist

Enter activity "Clinical Enhancement Module-Youth Mental Health" in the search section and proceed.

Please notify Jennifer Conway by email conwayj@student.unimelb.edu.au when you have completed the module.

6 weeks after notification is received, the final survey will be emailed to you for completion and to be returned within 2 weeks.

Thanks again!

GPimED-online module completion

Department of General Practice and Primary Health Care

Academic Centre

Primary Researcher: Dr Jennifer Conway

Additional Researchers: A/Prof Lena Sanci-Primary Supervisor, Dr Sandra Davidson Cosupervisor

Thank you for completing our initial survey. Hopefully, you also have completed the online learning module which is a great training opportunity.

If you have completed it and simply forgotten to notify the researcher Dr Conway-simply click the following link: conwayj@student.unimelb.edu.au to let her know.

If you have not completed the module as yet, please do so as soon as possible and notify on the above email if you wish to still be in the running to win the \$500 on offer and get some KFP exam practice.

Thanks again for your participation.

Invitation to GPT2 & 3 Registrars
Term 1 2018

Opportunity to improve early diagnosis capacity regarding serious health disorders



Are you up for a challenge with a reward?

A research project looking at improving GPT2 & 3 Registrar capacity to make an early diagnosis and more appropriate management decisions regarding a group of serious health disorders has been developed.

Expressions of interest are being sought to be part of a University of Melbourne Master of Medicine research project by Dr Jennifer Conway MBBS DRANZCOG Grad.Dip.IM FRACGP.

Proposal: This research project will evaluate the effect of a 1 hour online learning module on GPT2 and 3 knowledge and diagnostic capacity regarding early detection and appropriate management of a group of serious health illnesses that are currently not well managed in General Practice. There will be two surveys to complete pre and post intervention, taking about 3 hours in total including the online module.

**Eligible participants will be in the draw to win \$500
that could cover the cost of one year RACGP
Membership (or be used to cover other expenses).**

With thanks to the Gordon P. Castles Scholarship MDHS.

For further information:

Refer to the attached additional documents: Plain Language Statement (PLS) and Consent.

RSVP: 5pm Wednesday
21 March 2018

To register:

After reading the PLS and consent form, please reply by email to:
Dr Jennifer Conway
email:conwayj@student.unimelb.edu

Ethics ID 1648419.1 Date 06/04/17
Version 1

Plain Language Statement

Melbourne Medical School,

Department of General Practice and Primary Health Care

Academic Centre,

Faculty of Medicine, Dentistry and Health Sciences



Project: Needle in the haystack -Trial

Responsible Researcher	A/Prof. Lena Sancı
Co-supervisor	Dr Sandra Davidson
Tel: +61 3 83446152	Email: l.sanci@unimelb.edu.au
Researcher	Dr Jennifer Conway
Tel: +61 417586567	Email: conwayj@student.unimelb.edu.au

Introduction

Thank you for your interest in participating in this research project. The following few pages will provide you with further information about the project, so that you can decide if you would like to take part in this research.

Please take the time to read this information carefully. You may ask questions about anything you don't understand or want to know more about.

Your participation is voluntary. If you don't wish to take part, you don't have to. If you begin participating, you can also stop at any time.

What is this research about?

This project will be evaluating whether completion of a new 1 hour online interactive educational module can improve early diagnosis and appropriate management by General Practice (GPT2 and GPT3) Registrars regarding a group of relatively uncommon, serious medical problems that are frequently missed. There is evidence in the literature that there are aspects of training that is lacking in the medical curriculum and this has an impact on the capacity of Primary Health Practitioners to make timely diagnosis and appropriate management decisions for patients with these disorders. This research may contribute to additional training of our future GP workforce to better equip them to manage their patients when they present to General Practice.

What will I be asked to do?

Should you agree to participate, you will be asked to complete an online questionnaire in **1 week** regarding demographics, education and hospital rotations, your knowledge and confidence regarding consulting with young people and mental health issues.

You will also be asked to complete a series of questions regarding a clinical vignette in the format of the Key Feature Problem component of the FRACGP exam.

*You will then be allocated to either the control or intervention group. Both groups will be given access to an online module and given **2 weeks** to complete and return it. There will be a tick box option for a follow up phone call regarding feedback about the module.*

*After a **6-week interval**, ALL participants will be sent a series of clinical vignettes and questions to be read and completed and returned in **1 week**.*

The researcher requests that there be no discussion regarding the clinical vignettes until after all answers have been returned.

Feedback to all participants will be given by the researcher and access to the online module will be made available for the control group.

What are the possible benefits?

The possible benefits of this research are many

1. Upskilling GP Registrars in early diagnosis and intervention in these illnesses will improve patient prognosis and quality of life as demonstrated in the literature. The GP Registrars will have access to high quality educational material with latest recommendations for diagnosis and management.
2. All participants will be in the draw to win \$500 which will pay for example- your 12 months membership to RACGP.
3. The research candidate will gain valuable skills in research and supervision.
4. If the findings demonstrate a definite change in diagnosis and management then potentially the module could be made available to all Registrars as part of the Mental Health training during preparation for FRACGP or FACCRM.

What are the possible risks?

Content of the module may cause distress or raise issues for some participants. If this occurs then Dr Jennifer Conway can be contacted at any time for debriefing and referral to appropriate support services if required.

Otherwise the only risk is of slight inconvenience with completing the surveys and module.

Do I have to take part?

No. Participation is completely voluntary. You are able to withdraw (quit) at any time. Any data collected about you will be withdrawn if you decide that you no longer wish to participate.

Will I hear about the results of this project?

We intend to produce a full report of this research and make it publically available on the Eastern Victoria and Murray City, Coast and Country GP training program websites.

We will also be presenting the research at conferences and in academic journal

Manuscripts. It is possible the medical media may also be interested in the results.

All participants will be given feedback regarding the project

What will happen to information about me?

Your identity will be kept preserved as you will not be identified in any transcripts or publications arising from this work.

Your survey responses will be kept on the hard drive of the Department of General Practice in a folder that is locked with a password only available to the researchers working on this project. Data is kept for a minimum of five years after the last publication or media event and thereafter is deleted from storage. Your contact details will be kept in a separate file in the same locked area and will only be accessed if we want to re-visit the data for a different unrelated project in which case we will contact you for permission.

All information regarding participants will be stored on secure device. The data will be held by the University of Melbourne for 5 years and then destroyed.

Who is funding this project?

Dr. Jennifer Conway has been awarded the Gordon P. Castles Scholarship from the University of Melbourne Faculty of Medicine Dentistry and Health Sciences.

Value: \$13,538 per annum

Where can I get further information?

If you would like more information about the project, please contact the researchers.

A/Prof Lena Sanci l.sanci@unimelb.edu.au or

Dr. Jennifer Conway conwayj@student.unimelb.edu.au mob: 0417 586 567

Who can I contact if I have any concerns about the project?

This research project has been approved by the Human Research Ethics Committee of The University of Melbourne. If you have any concerns or complaints about the conduct of this research project, which you do not wish to discuss with the research team, you should contact the Manager, Human Research Ethics, Office for Research Ethics and Integrity, University of Melbourne, VIC 3010. Tel: +61 3 8344 2073 or Email: HumanEthics-complaints@unimelb.edu.au. All complaints will be treated confidentially. In any correspondence please provide the name of the research team or the name or ethics ID number of the research project.

Consent Form: GP Registrars

Department of General Practice and Primary Health

Care Academic Centre



Primary Researcher: Dr Jennifer Conway

Additional Researchers: A/Prof Lena Sanci-Primary Supervisor, Dr Sandra Davidson Co-supervisor

-
1. I consent to participate in this project, the details of which have been explained to me, and I have been provided with a written plain language statement to keep.
 2. I understand that the purpose of this research is to investigate the effectiveness of a 1 hour online learning module in improving GP Registrar capacity to make an early diagnosis and appropriate management decisions of debilitating and potentially life threatening mental health problems.
 3. I understand that my participation in this project is for research purposes only.
 4. I acknowledge that the possible effects of participating in this research project have been explained to my satisfaction.
 5. In this project I will be required to complete an initial questionnaire regarding demographics, education, knowledge and confidence. I will be asked to complete a series of questions regarding a clinical vignette in the form of a Key Feature Problem as per the FRACGP exam.
 6. I will then be randomised into either the control or intervention group. I will then complete an online module and then will be given some clinical vignettes to assess and answer a series of questions regarding diagnoses and management options.
 7. I understand that my participation is voluntary and that I am free to withdraw from this project anytime without explanation or prejudice and to withdraw any unprocessed data that I have provided.
 8. I understand that the data from this research will be stored at the University of Melbourne and will be destroyed after 5 years.
 9. I have been informed that the confidentiality of the information I provide will be safeguarded subject to any legal requirements; my data will be password protected and accessible only by the named researchers.

10. I understand that after I sign and return this consent form, it will be retained by the researcher.

HREC Number: 1648419-1 Project Start Date: 01/08/17 Version:

GPimED study

Department of General Practice and Primary Health Care

Academic Centre



Primary Researcher: Dr Jennifer Conway

Additional Researchers: A/Prof Lena Sanci-Primary Supervisor, Dr Sandra Davidson Cosupervisor

Dear Doctor

Many thanks for your expression of interest in participating in our study. Unfortunately, from your initial survey responses, you do not fit the eligibility criteria.

At completion of the study, we will forward you the details to access the learning modules for your own professional development.

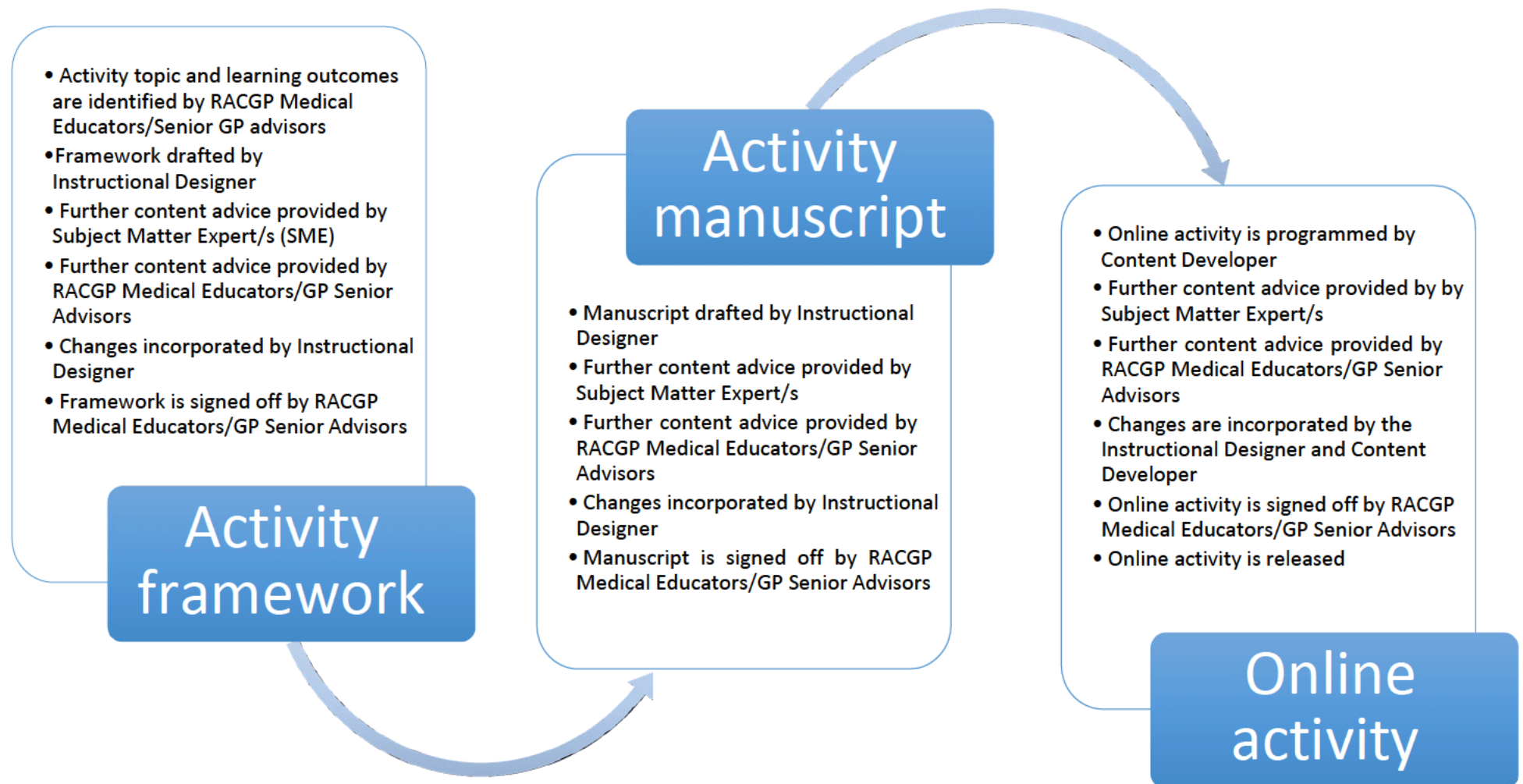
.

Once again thank you for your interest and we wish ongoing success and career satisfaction as you continue your journey towards becoming a FRACGP General Practitioner.

Regards

Dr Jennifer Conway

Appendix 7



Appendix 8

Post module survey KFP cases and scoring

Case 1. Female “Suzie Derham” 19 years old

Presenting complaint-

CONSTIPATION-requesting laxatives as feeling sick and is constantly bloated, having “trouble going to the toilet “ also wanting a certificate as couldn’t face going to work as feeling “stressed”

Has not opened bowels for 3 days- this is a common occurrence and frequently gets abdominal pain and wind +++,often avoids eating as it seems to only cause pain, uses over the counter laxatives but they don’t seem to be working any longer

long standing bowel problems, has tried eliminating certain foods e.g. fats, dairy- has helped her feel a bit better, long term vegetarian and is currently vegan but still constipated- asking about possibility of food intolerances-has googled it and thinks she may have it so has cut out all carbs.

FEELING DIZZY-sometimes, usually when exercising

Denies vomiting

Past Medical History:

Tonsillectomy age 9

Mild asthma and dermatitis since childhood

Medications:

Ventolin puffer prn

FHX

Don’t know much about her father’s family as he moved out when she was 12

Mother-has had anxiety and went “crazy” after the dad left- bit better now but still on medication

Measures to score answers:

What other questions might you ask to find out more of what is going on with Suzie?

HEADSS: was it administered and if so then one point for each aspect. **Max 8**

- HOME:

lives at home still, eldest of 3, gets on ok with siblings- usual squabbles Their, father left the family when she was in Grade 6 and has since repartnered. Suzie doesn’t get on with new partner, but generally gets along with her mother but as she suffers with anxiety and is menopausal, they do

clash sometimes-usually when Suzie is heading out at night to go to the gym. She has a 15-year-old sister and 11-year-old brother all at home as well

Mum works full time as a secondary school science/maths teacher in Doncaster. Father in IT.

Minimises her contact with her father as he always tries to force the new partner on her and siblings. She gets angry and is struggling to deal with the hurt she and the family feel at his leaving.

Her little brother sees their Dad alternate weekends and stays there- she hates that, and it is a source of conflict between her and her brother. Dad lives only a few streets away, so she actively tries to avoid him. Her middle sister prefers to keep contact with their father to minimum as well and this has also caused issues with their Mum who is getting hassled by their father to make the girls spend time with him.

- EDUCATION/EMPLOYMENT

Studying Sports Science part-time at VU, works part-time at a gym-enjoys both as gets to exercise and get paid. She really enjoys putting together exercise programs and training and nutrition plans.

Attended PEGGS- had been a good student (if pushed- A student) but grades fell off as did motivation when her parents split so didn't do as well as everyone expected with her ATAR. She- wanted to get into University of Melbourne to do Science but didn't get the required marks. Her Dad was very disappointed as he and her Mum met at University and always wanted her to go there. She feels angry with his attitude as "if he handed left us then I wouldn't have done so badly in Year 12- he won't admit that it is all his fault"

- EATING

Been vegetarian since 12 years old (ethical reasons if asked), with digestive trouble has been Vegan for last 18 months-often skips meals now as feels so sick after eating, colicky pains and nausea –

Weight loss- has lost about 15 kg since VCE, university and job keep her active. She is happy with the weight loss and people comment she looks great.

Happy with current weight- looks slim and fit

- ACTIVITIES

Exercises daily- at least 2 hours per day either at work, likes running, will run 4-8 km as well as push ups and classes at the gym, goes to gym after uni as well as is a 24 hour one down the road from home (ASCOT VALE)

Doesn't go out and has mostly lost touch with her school friends and too busy to have made friends on campus plus she is only there for Prac classes as she can watch the lectures online.

- DRUGS AND ALCOHOL

Non-drinker and non-smoker, denies party drug use as well- lots of her school friends have gotten into party drug scene and smoking weed so she now can't be bothered with them as she doesn't fit in with their scene- chooses not to hang out with them now □ SEXUALITY

Never had a boyfriend, too busy with university and work to be bothered, never sexually active, not on contraceptive but has not had a period for 14 months- happy as is convenient for her exercising
Never been sexually abused

- SUICIDE/DEPRESSION/SELF HARM

Denies suicidal thoughts but admits to self-harm. She used to cut her arms a bit as a teen around the time her Dad left. Never had counselling at any stage and had never disclosed to anyone regarding this. Her mum tried to get her to see the Counsellor at school, but she refused as didn't want the other students seeing her go to the Student Wellbeing office and then ask questions.

- SAFETY FROM INJURY AND VIOLENCE

Safe at home, makes sure she knows correct use of gym equipment however does run at night alone sometimes if she has not had time during the day. Her mum really doesn't like that she does this but it- helps her sleep and is "good" stress management

HEADSS: Clinical Practice Guidelines-Engaging with and assessing the adolescent patient Royal Childrens Hospital

Headspace Psychological Assessment for Young People

SCOFF ANSWERS points allocated if SCOFF administered

Max 5

. SCOFF

S – Do you make yourself Sick because you feel uncomfortably full?	yes
C – Do you worry you have lost Control over how much you eat?	yes
O – Have you recently lost more than One stone (6.35 kg) in a 3-month period?	no
F – Do you believe yourself to be Fat when others say you are too thin?	yes
F – Would you say Food dominates your life?	No

Questions to ask a patient with a suspected eating disorder-points for each of these

Max 4

- Have you been deliberately trying to limit the amount of food that you eat to Influence your shape or weight (whether or not you have succeeded)?

Answer - yes-has become vegan and has also cut out carbs- initially was to see if that would help with constipation but once she started losing weight has continued on

- Have you gone for long periods of time (8 waking hours or more) without eating anything at all in order to influence your shape or weight?

Answer-yes- when at work usually doesn't eat during the shift – finds if she does, she feels bad and has to then do extra circuit work

- Have you tried to exclude from your diet any foods that you like in order to influence your shape or weight (whether or not you have succeeded)?

Answer yes—see answer 1

- Have you tried to follow definite rules regarding your eating (for example, a Calorie limit) in order to influence your shape or weight (whether or not you have succeeded)?

Answer yes has had to work out a weight loss exercise and nutritional plan as an assignment at uni—thought she would trial it herself

What might be some differential diagnoses? Question one

Differential diagnosis one point each Eating disorders

Max 5

Coeliac disease

FODMAP

Generalised anxiety

Thyroid disease

List what aspects on examination you would be looking for

Max 15

Examination: one point for each

Height, weight, BMI calculation using CDC chart if <20

Lying and standing BP and pulse

Signs of malnutrition—lanugo, brittle nails, hair loss, bruising, oedema,

Signs of purging—dental decay, knuckle calluses, swollen parotid glands

What investigations would you perform?

Max 16

Investigations: one point for each

Electrolytes, LFTS, FBE, B12/folate, Vitamin D,

Calcium, Magnesium, Phosphate, FSH, Oestradiol

TFTS, Iron studies, random blood glucose

ECG

DEXA scan

Would you consider follow up and/ or referral to other health professionals and if so please list and give indication of time frame

Max 6

GPMHP ,Dietician, Psychologist, Psychiatrist, Mental Health Nurse,

1 point

Gastroenterologist, Gynaecologist

½ point each

Case 2-Male early 20s “James Cassidy”

Presenting complaint

LACK OF ENERGY AND TROUBLE GETTING A GOOD NIGHT’S SLEEP

Over the last few months James has noticed increasing difficulty with getting to sleep but is also waking up overnight as well. This is causing him problems as he has to get up early as he works as a Tradie. He has to get onsite by 0700 and his company works all over Melbourne which means he sometimes he has to be out the door before 0500 to beat the traffic.

He often sleeps in and this is really starting to annoy him as despite this, he is getting more and more tired. It is also impacting on his work but more importantly, on his capacity to perform at footy training and on game day. He drives home to the Yarra Valley and plays in the Seconds now. He was in the seniors but was dropped to the Seconds due to poor form. This has knocked his self- esteem. Training is on Tuesday and Thursday nights back in the Upper Yarra.

In order to get back to sleep, James finds he ends up doing push ups or crunches to wear himself out. He is also carrying a chronic hamstring tear but enjoys exercising and finds it a good way to unwind so just pushes through even though it hurts and does slow him down on.

Past Medical History

Assorted broken bones- wrist, ankle- playing sport, falling off bikes when a kid

Never had surgery

Repeated hamstring injury-he has seen a physio who planned a rehab program for him but as he was told to ease back on his sport and training-, he hasn’t bothered to follow it Measures to score answers:

What other questions might you ask to find out more of what is going on with James?

HEADSS: was it administered and if so then one point for each aspect.

Max 8

HEADSS

- HOME

In a share house with some mates from high school days. He usually visits parents after footy training to drop off his washing and have dinner. He -gets on ok with parents and has 2 younger brothers both still at home. They are aged – 18 and 15 and he any-denies issues with them

- EDUCATION/EMPLOYMENT

VCAL at Lilydale Secondary College- now works as a plumber with Metricon Homes building new houses all over Melbourne. Really likes his job and his work crew are ok. Most are bulkier and have more muscles than him and they sometimes tease him a bit about being scrawny.

- EATING

Eats healthily other tradies tease him for that too as he doesn't eat junk food like the rest. He - never seems to gain any weight even though over the last 12 months he has started eating more and using protein powder shakes and going to the gym to try and bulk up. Despite all this, he is the same weight as when he was in mid-teens. He tries hard to bulk and even has been offered tablets at the gym. Deliberately eats bigger meals but that isn't working either..

- ACTIVITIES

Hangs out at share house but doesn't really go out much, goes to footy training and gym though avoids the usual beers and pub meal after footy training.

- DRUGS AND ALCOHOL

Non- smoker and non-drinker-another source of mockery-never used party drugs

- SEXUALITY

Had a girlfriend during year 12-didn't work out and not seeing anyone at present. His girlfriend dumped him for one of the other guys on the footy team- he felt very dejected and angry as they had started going out in Year 10. He is very suspicious now of any female!

- SUICIDE/DEPRESSION/SELF HARM

Denies suicidal ideation though was pretty low after break up with girlfriend-.James got into exercise as the new boyfriend was one of the ruckman in his footy team- more "ripped" than he was so he started working out and taking protein powders .He thought that would help his mood-which it has but now he HAS to exercise or he gets angry and anxious.-

James denies any deliberate self-harm but has hurt himself at times playing sport and keeps playing plus been stupid a few times and gotten drunk and ended up with stitches or in an fight(gets a bit agro when drunk so doesn't binge on alcohol anymore). When he was feeling "pretty crap" he used to get drunk but found that only made things worse so now he doesn't bother with alcohol.

- SAFETY FROM INJURY AND VIOLENCE

James is a bit of a hot head and has been in scraps before-,finds his training helps him feel better even if he is in pain or injured He .keeps away from alcohol as stated as gets him in trouble. The work site is pretty strict with OHS issues so no problems there- when he used to binge drink he had an issues with driving, he lost his licence for 3/12 for speeding but luckily he had never been caught for drink driving unlike some of his mates from footy. When he had lost his licence that caused hassles too as he had to get lifts from mates for work and they got fed up.

Questions to ask a patient with a suspected eating disorder **Max 4**

- Have you been deliberately trying to limit the amount of food that you eat to

Influence your shape or weight (whether or not you have succeeded)?

- Have you gone for long periods of time (8 waking hours or more) without eating anything at all in order to influence your shape or weight?
- Have you tried to exclude from your diet any foods that you like in order to influence your shape or weight (whether or not you have succeeded)?
- Have you tried to follow definite rules regarding your eating (for example, a?

Calorie limit) in order to influence your shape or weight (whether or not you have succeeded)?

SCOFF ANSWERS points allocated if SCOFF administered

Max 5

S – Do you make yourself Sick because you feel uncomfortably full?

C – Do you worry you have lost Control over how much you eat?

O – Have you recently lost more than One stone (6.35 kg) in a 3-month period?

F – Do you believe yourself to be Fat when others say you are too thin?

F – Would you say Food dominates your life?

If the patients answer 'Yes' to 2 or more then there is a high index of suspicion that they have an eating disorder and warrant a more detailed assessment.

SCOFF has been validated across various languages.

Reproduced with permission from the BMJ Group from Morgan JF, Reid F, Lacey JH. The SCOFF

Questionnaire: assessment of a new screening tool Other

assessment tools that could be used:

Eating Disorders Examination Questionnaire EDE-Q

Eating Disorders Screener EDDS

Examination Key points for examination

- Height and weight -all heavy clothing/accessories e.g. phones, keys etc. to be removed preferably and height measured in socks/bare feet
- BMI calculation (use of CDC chart if <20 years old)
- BP-lying and standing- any postural drop or postural tachycardia must be noted
- Temperature
- Muscle strength testing (squat test)

- Examine for signs of malnutrition and/or infection

Investigations if suspicious of Eating Disorder (Yeo 2011)

Investigations for suspected eating disorders	
Investigation	Possible findings
Full blood examination	Mild leucopenia or thrombocytopenia from malnutrition
• Anaemia from malnutrition or gastrointestinal losses	
Urea and electrolytes* • Hyponatraemia from excess water intake	
• Hypokalaemia from vomiting • Metabolic alkalosis from vomiting	
Random blood glucose Rarely low	
Calcium, phosphate and magnesium	
Hypocalcaemia, hypo magnesium and hypophosphatemia (uncommon)	
Liver function tests Slight elevation from malnutrition; albumin normal unless very chronic	
Follicle stimulating hormone (FSH), luteinising hormone (LH) and oestradiol	
Suppressed FSH and LH – oestradiol usually low	
Bone densitometry Scores may be reduced from low hormone levels and malnutrition	
Vitamin D Low from malnutrition	
Haematinics – iron studies, B12 and folate	
If indicated – low from malnutrition	

* Note electrolytes may also be elevated due to dehydration

ECG

DEXA bone density scan due to length of amenorrhea in females

Management considerations

Investigations: Registrars should identify need for blood work as listed and further investigations e.g. ECG.



Appendix 9

Eating Disorders factsheet

Last updated: 8 October 2019

- **What?** From 1 November 2019, a suite of new Eating Disorder items are being introduced to support a model of best practice evidence-based care for patients with anorexia nervosa and other eligible patients with eating disorders.
 - **Who?** These changes are relevant for medical practitioners (including a GP a psychiatrist or paediatrician), and eligible Clinical Psychologists and Psychologists, Occupational Therapists, Social Workers and Dietitians.
-



What are the changes?

From 1 November 2019, there will be 64 new items for Eating Disorders. The new item structure includes:

- 12 new items (**90250-90257 and 90260-90263**) for GPs, medical practitioners, consultant psychiatrists and paediatricians **preparation of eating disorders treatment and management plans.**
- 6 new items (**90264-90269**) for GPs, medical practitioners, consultant psychiatrists and paediatricians **review of eating disorders treatment and management plans.**
- 12 new items (**90271-90282**) for GPs, medical practitioners, consultant psychiatrists and paediatricians **provision of psychological treatment services.**
- 2 new items (**82350-82351**) for Dietitians **provision of eating disorders dietitian health services.**
- 32 new items (**82352-82383**) for Clinical Psychologists and Psychologists, Occupational Therapists and Social Workers **provision of eating disorder psychological treatment services.**

'To learn more about the new eating disorders services, please see [hyperlink to the quick reference guide, claiming examples sheet or other relevant information/sheets].'

Why are the changes being made?

The listing of these new items is a result of the Australian Government's response to recommendations in 2018 by the independent clinician-led Medical Benefits Schedule (MBS) Review Taskforce. The changes were recommended by the MBS Review Taskforce following an extensive period of consultation with key stakeholders.

The Taskforce is conducting a clinical-led review, and makes recommendations to the Government on how the MBS can be modernised to improve patient safety, support equity of access and reduce low-value care. More information about the Taskforce and associated Committees is available at [Medicare Benefits Schedule Review](#) in the consumer section of the Department of Health website (www.health.gov.au).

A full copy of the Eating Disorders Working Group's final report can be found at [Closed Consultation - Medicare Benefits Schedule \(MBS\) Review Taskforce reports](#) section of the Department of Health website (www.health.gov.au)

What does this mean for providers?

Providers will need to familiarise themselves with the new structure of eating disorders items, and associated rules and explanatory notes. General Medical Services Eating Disorders items (**90250-90257 and 90260-90269 and 90271-90282**) will be located in *Category 1 Professional attendances – Group A36 Eating Disorders Services*. Allied Health services eating disorders items (**82350-82383**) will be located in *Category 8 Miscellaneous Services – Group M16 Eating Disorders*.

Providers have a responsibility to ensure that any services they bill to Medicare meet the eligibility requirements outlined in the legislation.



How will these changes affect patients?

From 1 November 2019, eligible patients will be able to receive a Medicare rebate for the development of a treatment and management plan by a medical practitioner (including a GP a psychiatrist or paediatrician), regular GP reviews of their progress against the treatment plan, a formal specialist review and receive access to a course of evidence based eating disorder psychological treatment, up to 40 services in a 12 month period, and access up to 20 dietetic services, in a 12 month period, depending on their treatment needs.

Who was consulted on the changes?

The Eating Disorders Working Group was established in December 2017, by the MBS Review Taskforce (the 'Taskforce'), to provide broad clinician and consumer expertise.

The MBS Review included a public consultation process on the proposed changes from 5 October 2018 to 2 November 2018. Feedback was received from a broad range of stakeholders and considered by the Eating Disorders Working Group prior to making its final recommendations to the Taskforce. Stakeholders included the:

- Australia and New Zealand Academy of Eating Disorders
- InsideOut Institute (formerly Centre for Eating and Eating Disorders)
- National Eating Disorders Collaboration
- Butterfly Foundation
- Consumers Health Forum
- Australian Association of Social Workers
- Australian Clinical Psychology Association
- Australian Psychological Society
- Royal Australasian College of Physicians
- The Royal Australian College of General Practitioners
- Royal Australian and New Zealand College of Psychiatrists

How will the changes be monitored and reviewed?

Eating Disorder items will be subject to MBS compliance processes and activities, including random and targeted audits which may require a provider to submit evidence about the services claimed.

Significant variation from forecasted expenditure may warrant review and amendment of fees, and incorrect use of MBS items can result in penalties including the health professional being asked to repay monies that have been incorrectly received.

The new items will be reviewed after 12 months to assess whether the items are operating as intended for patients, providers, and the Government.

Where can I find more information?

The full item descriptor(s) and information on other changes to the MBS will be made available on the MBS Online website at www.mbsonline.gov.au in coming weeks. You can also subscribe to future MBS updates by visiting [MBS Online](#) and clicking 'Subscribe'.



The Department of Health provides an email advice service for providers seeking advice on interpretation of the MBS items and rules and the Health Insurance Act and associated regulations. If you have a query relating exclusively to interpretation of the Schedule, you should email askMBS@health.gov.au.

Subscribe to '[News for Health Professionals](#)' on the Department of Human Services website and you will receive regular news highlights.

If you are seeking advice in relation to Medicare billing, claiming, payments, or obtaining a provider number, please go to the Health Professionals page on the Department of Human Services website or contact the Department of Human Services on the Provider Enquiry Line – 13 21 50.

The data file for software vendors is expected to become available in October 2019 and will be accessed via the MBS Online website under the [Downloads](#) page.

Please note that the information provided is a general guide only. It is ultimately the responsibility of treating practitioners to use their professional judgment to determine the most clinically appropriate services to provide, and then to ensure that any services billed to Medicare fully meet the eligibility requirements outlined in the legislation.

This sheet is current as of the Last updated date shown above, and does not account for MBS changes since that date.

Item numbers	MHST or Credentialed	Duration	Benefit 100%	Plan details
90250	NO	20-39 min	72.85	Written ED Tx and Mx plan which includes: a. Diagnosis b. Tx options and recommendations for the 12 months c. Outline referral options to AHP for mental health and dietetic services, specialists, etc (<i>referred clinicians must be eligible to provide MBS services under Better Access for psychological treatment or Chronic Disease Management for dietetic services</i>) d. Offer the patient & patient's carer (if any and if deemed appropriate with patient consent) a copy of plan and ED education
90251	NO	40 min and above	107.25	
90252	YES – MHST	20-39 min	92.50	
90253	YES – MHST	40min and above	136.25	
90264	Not specified	Not specified	72.85	Review ED TX and MX plan a. Treatment efficacy and evaluate with patient if it meets their needs b. Modifications to continue with Tx options in the plan or Alter treatment options in the plan with new arrangements c. Initiate referrals to psychiatrist or paediatrics as appropriate d. Offer the patient & patient's carer (if any and if deemed appropriate with patient consent) a copy of plan and ED education
90271	YES - FPS (in Consulting room)	30-39min	94.25	GP providing psychological services indicated in ED Tx and Mx plan. Specified evidence-based modalities: ☐ Family Based Treatment for Eating Disorders (EDs) ☐ Adolescent Focused Therapy for EDs ☐ Cognitive Behavioural Therapy (CBT) for EDs (CBT-ED) ☐ CBT-Anorexia Nervosa (CBT-AN)
90272	YES - FPS (out of consulting room, i.e. group session)	30-39 min	90271 Plus \$26.35/Pt number seen up to 6 pts.	
90273	YES - FPS (in Consulting room)	40 min and above	134.85	



90274	YES - FPS (out of consulting room, i.e. group session)	40 min and above	90273 Plus \$26.35/Pt number seen up to 6 pts.	☐ CBT for Bulimia Nervosa and Binge Eating Disorder (CBT-BN, CBT-BED)
90279	FPS via video conference	30-39 min	\$94.25	☐ Specialist Supportive Clinical Management (SSCM) for EDs
90280	FPS via video conference	40 min and above	\$134.85	☐ Maudsley Model of Anorexia Treatment in Adults (MANTRA)
				☐ Interpersonal Therapy (IPT) for BN, BED
				☐ Dialectical Behavioural Therapy (DBT) for BN, BED
				☐ Focal psychodynamic therapy for EDs

Prepared by the National Eating Disorders Collaboration in partnership with General Practitioners Dr Aline Smith and Dr Jenny Conway, for presentation at the GP19 and RMA19 conferences, 26 October 2019



Patient eligibility and assessment

There are two cohorts of eligible patients:

- a. Patients with a clinical diagnosis of anorexia nervosa; or
- b. Patients who meet the eligibility criteria (below), and have a clinical diagnosis of any of the following conditions:

- ☐ bulimia nervosa;
- ☐ binge-eating disorder;
- ☐ other specified feeding or eating disorder.

The eligibility criteria, for a patient from cohort b, is:

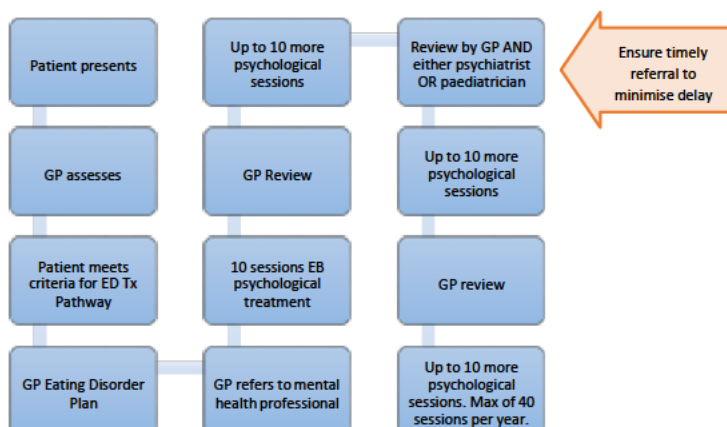
- ☐ a person who has been assessed as having an Eating Disorder Examination Questionnaire (EDE-Q) score of 3 or more; and
- ☐ the condition is characterised by rapid weight loss, or frequent binge eating or inappropriate compensatory behaviour as manifested by 3 or more occurrences per week; and
- ☐ a person who has at least two of the following indicators:
 - clinically underweight with a body weight <85% of expected weight where weight loss is directly attributable to the eating disorder;
 - current or high risk of medical complications due to eating disorder behaviours and symptoms;
 - serious comorbid medical or psychological conditions significantly impacting on medical or psychological health status with impacts on function;
 - the person has been admitted to a hospital for an eating disorder in the previous 12 months;
 - inadequate treatment response to evidence based eating disorder treatment over the past six months despite active and consistent participation.

Practitioners should have regard to the relevant diagnostic criteria set out in the Diagnostic and Statistical Manual of Mental Disorders (DSM-5).

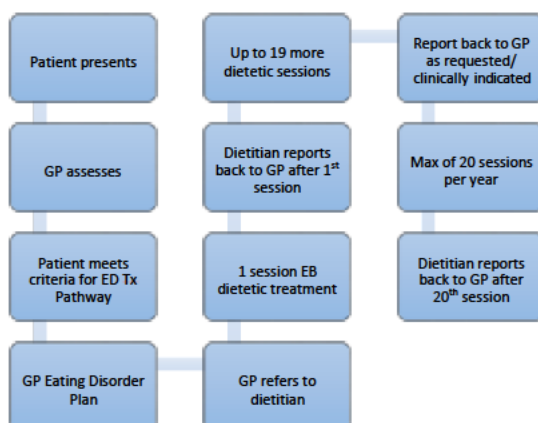


Pathways through treatment

• Psychological Treatment



• Dietetic Services



GP DETAILS					
GP Name Provider No.			Practice Name & address		
Practice postcode		Practice phone		Practice fax	
GP or practice email					
GP preferred method/s of multidisciplinary team communication		☐ Letter ☐ Email. _____ ☐ SMS _____ ☐ Phone call _____ ☐ Other _____			
PATIENT DETAILS					
First Name			Last Name		
Date of Birth			Age		
Marital Status	☐ Never Married ☐ Widowed ☐ Divorced ☐ Separated ☐ Married/De facto				
Current Gender Identity	☐ Female ☐ Male ☐ Non-binary ☐ Not Stated ☐ Transgender ☐ Female/Male-Female ☐ Transgender Male/Female-Male				
Address					
Suburb			Postcode		
Phone 1			Phone 2		
Country of Birth			Cultural Identity		
Aboriginal or Torres Strait Islander		☐ Aboriginal ☐ Torres Strait Islander ☐ Both ☐ Neither ☐ Unknown			
Main language spoken at home					

Proficiency in spoken English	☐ Very Well ☐ Well ☐ Not Well ☐ Not at All
Family/ support person details Consider involving support person in session if appropriate	

Updated October 2019

Page 1 of 7

ELIGIBILITY FOR EDP	
EATING DISORDER DIAGNOSIS (DSM-V) https://insideoutinstitute.org.au/resource-library/dsm5-diagnostic-criteria-for-eating-disorders	☐ Anorexia Nervosa (AN) <i>(meets criteria for an EDP and additional eligibility criteria not necessary)</i> ☐ Bulimia Nervosa (BN) ☐ Binge Eating Disorder (BED) <i>must meet all</i> <i>other criteria</i> ☐ Other Specified Feeding or Eating Disorder (OSFED)
EDE-Q Global Score <i>(score $\geq$ 3 for eligibility)</i> https://insideoutinstitute.org.au/assessment?start-ed=true	
EATING DISORDER BEHAVIOURS <i>(at least 1 for EDP eligibility)</i>	☐ Rapid weight loss ☐ Binge eating <i>(frequency $\geq$ 3 times/ week)</i> ☐ Inappropriate compensatory behaviour (e.g. purging, excessive exercise, laxative abuse) <i>(frequency: $\geq$ 3 times/week)</i>
CLINICAL INDICATORS <i>(at least 2 for EDP eligibility)</i>	☐ Clinically underweight ($< 85\%$ expected weight with weight loss due to eating disorder) <i>Detail:</i> ☐ Current or high risk of medical complications due to eating disorder <i>Detail:</i>

- IPT for BN or BED - DBT for BN or BED - Focal psychodynamic therapy for EDs		
Actions record the actions the patient needs to make		
Emergency Care/Relapse Prevention		
Physical examination conducted (see attached)	☐ YES	☐ NO
Patient education given	☐ YES	☐ NO
Copy of EDP given to patient	☐ YES	☐ NO
Copy of EDP given to other providers	☐ YES	☐ NO
GP REVIEW REQUIREMENTS		
☐ Mental health: Prior or at sessions 10, 20 & 30 of psychological treatment & at EDP completion ☐ Dietetics: after Session 1 or 2 and at EDP completion Note: PSYCHIATRIC OR PAEDIATRIC REVIEW Required in addition to GP review to access sessions 21-40. Consider referring early in course of treatment		

MENTAL HEALTH ASSESSMENT & HISTORY

Previous specialist mental health care				
Family History of Mental Illness				
Social history	With whom does the person live? Highest education level completed: What is their employment status? Other Relevant Information:			
Personal History	(eg childhood, education, relationship history, coping with previous stressors)			
Mental Status Examination				
Appearance and General Behaviour Normal Other:		Mood (Depressed/Labile) Normal Other:		
Thinking (Content/Rate/Disturbances) Normal Other:		Affect (Flat/blunted) Normal Other:		
Perception (Hallucinations etc.) Normal Other:		Sleep (Initial Insomnia/Early Morning Wakening) Normal Other:		
Cognition (Level of Consciousness/Delirium/Intelligence)		Appetite (Disturbed Eating Patterns)		
Attention/Concentration		Motivation/Energy		
Memory (Short and Long Term)		Judgement (Ability to make rational decisions)		
Insight		Anxiety Symptoms (Physical & Emotional)		
Orientation (Time/Place/Person)		Speech (Volume/Rate/Content)		
Risk Assessment				
Suicidal ideation	☐ YES	☐ NO	Suicidal intent	☐ YES ☐ NO
Current plan	☐ YES	☐ NO	Risk to others.	☐ YES ☐ NO

RECORD OF PATIENT CONSENT

I, _____, (**patient** name - please print clearly)
Agree to information about my mental and medical health to be shared between the GP and the health professionals to whom I am referred, to assist in the management of my health care.

Signature (patient):

Date:

I (GP) have discussed the proposed referral(s) with the patient and am satisfied that the patient understands the proposed uses and disclosures and has provided their informed consent to these.

GP Signature

GP Name

Date

Eating Disorder examination questionnaire (EDE-Q 6.0)

Instructions: The following questions are concerned with the past four weeks (28 days) only. Please read each question carefully. Please answer all the questions.

Thank you.

Questions 1 to 12: Please circle the appropriate number on the right. Remember that the questions only refer to the past four weeks (28 days) only.

EDE-Q 6.0

	ON HOW MANY OF THE PAST 28 DAYS ...	NO DAYS	1-5 DAYS	6-12 DAYS	13-15 DAYS	16-22 DAYS	23-27 DAYS	EVERY DAY
1	Have you been deliberately trying to limit the amount of food you eat to influence your shape or weight (whether or not you have succeeded)?	0	1	2	3	4	5	6
2	Have you gone for long periods of time (8 waking hours or more) without eating anything at all in order to influence your shape or weight?	0	1	2	3	4	5	6
3	Have you tried to exclude from your diet any foods that you like in order to influence your shape or weight (whether or not you have succeeded)?	0	1	2	3	4	5	6
4	Have you tried to follow definite rules regarding your eating (for example, a calorie limit) in order to influence your shape or weight (whether or not you have succeeded)?	0	1	2	3	4	5	6
5	Have you had a definite desire to have an empty stomach with the aim of influencing your shape or weight?	0	1	2	3	4	5	6
6	Have you had a definite desire to have a totally flat stomach?	0	1	2	3	4	5	6
7	Has thinking about food, eating or calories made it very difficult to concentrate on things you are interested in (for example, working, following a conversation, or reading)?	0	1	2	3	4	5	6
8	Has thinking about shape or weight made it very difficult to concentrate on things you are interested in (for example, working, following a conversation, or reading)?	0	1	2	3	4	5	6
9	Have you had a definite fear of losing control over eating?	0	1	2	3	4	5	6
10	Have you had a definite fear that you might gain weight?	0	1	2	3	4	5	6
11	Have you felt fat?	0	1	2	3	4	5	6
12	Have you had a strong desire to lose weight?	0	1	2	3	4	5	6

PAGE 1/3 PLEASE GO TO THE NEXT PAGE

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Eating Disorder examination questionnaire (EDE-Q 6.0)

Questions 13-18: Please fill in the appropriate number in the boxes on the right. Remember that the questions only refer to the past four weeks (28 days). Over the past four weeks (28 days)....

13 Over the past 28 days, how many **large amount of food** (given the circumstances)? **times** have you eaten what other people would regard as an **unusually**

14 ... On how many of these times did you have a sense of having lost control over your eating (at the time you were eating)?

15 Over the past 28 days, on how many an unusually large amount of food **and DAYS** have had a sense of loss of control at the time)? have such episodes of overeating occurred (i.e. you have eaten

16 Over the past 28 days, how many shape or weight? **times** have you made yourself sick (vomit) as a means of controlling your

17 Over the past 28 days, how many weight? **times** have you taken laxatives as a means of controlling your shape or

18 Over the past 28 days, how many controlling your weight, shape or amount of fat, or to burn off calories? **times** have you exercised in a "driven" or "compulsive" way as a means of

Questions 19 to 21: Please circle the appropriate number. Please note that for these questions the term "binge eating" means eating what others would regard as an unusually large amount of food for the circumstances, accompanied by a sense of having lost control over eating.

		NO DAYS	1-5 DAYS	6-12 DAYS	13-15 DAYS	16-22 DAYS	23-27 DAYS	EVERY DAY
19	Over the past 28 days, on how many days have you eaten in secret (ie, furtively)? ... Do not count episodes of binge eating.	0	1	2	3	4	5	6
		NONE OF THE TIMES	A FEW OF THE TIMES	LESS THAN HALF	HALF OF THE TIMES	MORE THAN HALF	MOST OF THE TIME	EVERY TIME
20	On what proportion of the times that you have eaten have you felt guilty (felt that you've done wrong) because of its effect on your shape or weight? ... Do not count episodes of binge eating.	0	1	2	3	4	5	6
		NOT AT ALL		SLIGHTLY	MODERATELY		MARKEDLY	
21	Over the past 28 days, how concerned have you been about other people seeing you eat? ... Do not count episodes of binge eating.	0	1	2	3	4	5	6

PAGE 2/3 PLEASE GO TO THE NEXT PAGE

EDE-Q 6.0
and Sarah Beglin

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Eating Disorder examination questionnaire (EDE-Q 6.0)

Questions 22 to 28: Please circle the appropriate number on the right. Remember that the questions only refer to the past four weeks (28 days).

	ON HOW MANY OVER THE PAST 28 DAYS ...	NOT AT ALL	SLIGHTLY		MODERATELY		MARKEDLY	
22	Has your weight influenced how you think about (judge) yourself as a person?	0	1	2	3	4	5	6
23	Has your shape influenced how you think about (judge) yourself as a person?	0	1	2	3	4	5	6
24	How much would it have upset you if you had been asked to weigh yourself once a week (no more, or less, often) for the next four weeks?	0	1	2	3	4	5	6
25	How dissatisfied have you been with your weight ?	0	1	2	3	4	5	6
26	How dissatisfied have you been with your shape ?	0	1	2	3	4	5	6
27	How uncomfortable have you felt seeing your body (for example, seeing your shape in the mirror, in a shop window reflection, while undressing or taking a bath or shower)?	0	1	2	3	4	5	6
28	How uncomfortable have you felt about others seeing your shape or figure (for example, in communal changing rooms, when swimming, or wearing tight clothes)?	0	1	2	3	4	5	6

What is your weight at present? (Please give your best estimate.):

What is your height? (Please give your best estimate.):

If female: Over the past three to four months have you missed any menstrual periods?: YES ☐ NO ☐

If so, how many?:

Have you been taking the "pill"?: YES ☐ NO ☐

PAGE 3/3

THANK YOU

Appendix 10

Eating Disorders-Practical Steps in Primary Care

Hilary Smith

Workforce Development Manager, NEDC

Dr Jenny Conway

General Practitioner, Get Well Clinic

Eating Disorders in Australia

- Prevalence: about the same as asthma • Mortality rate: higher than national road toll
- All eating disorders:
 - Over evaluation of shape, weight & their control
 - Considerable psychological impairment and distress
 - Wide-ranging, serious medical & psychological complications
 - Can affect every organ in the body



EDs in rural and remote Australia

- Lower awareness → lower identification and early intervention
- “Core business” and exclusion criteria
- Harder to access, coordinate and sustain mental healthcare, physical healthcare and nutritional management
- High risk of recurrence and chronicity

New Medicare items for EDs

- Starts 1 November (this Friday!)
- 64 new items

While 75% of respondents to an NEDC survey said that rural and remote mental health services were either good or very good, only 4% said the same of rural and remote eating disorder services.



- High suicide risk
 - Preparation of ED treatment and management plans
 - Review of ED treatment and management plans
 - Provision of psychological treatment services by GPs
 - Dietetic services (up to 20 sessions per year)
 - Psychological treatment by mental health professionals (up to 40 sessions per year)

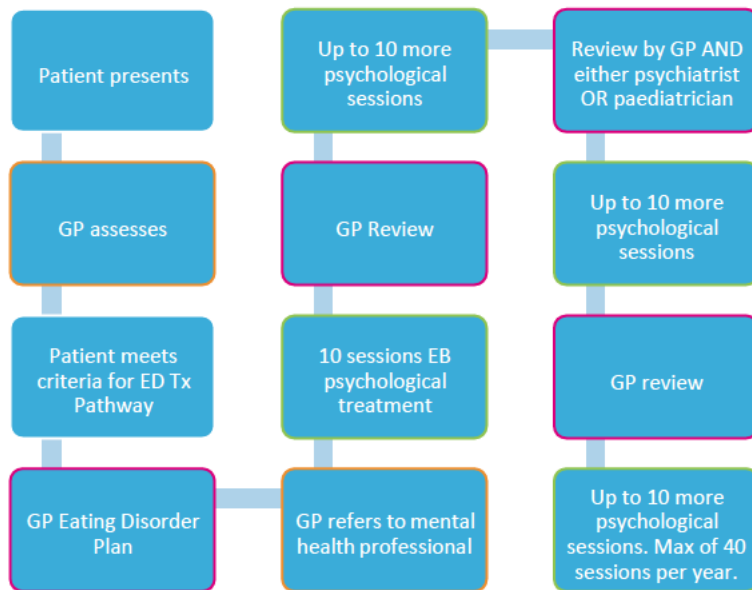
New Medicare items for EDs – patient eligibility

- All patients with Anorexia Nervosa
- Other eligible patients o Bulimia Nervosa, Binge Eating Disorder or OSFED o Severe and complex presentations (next slide)

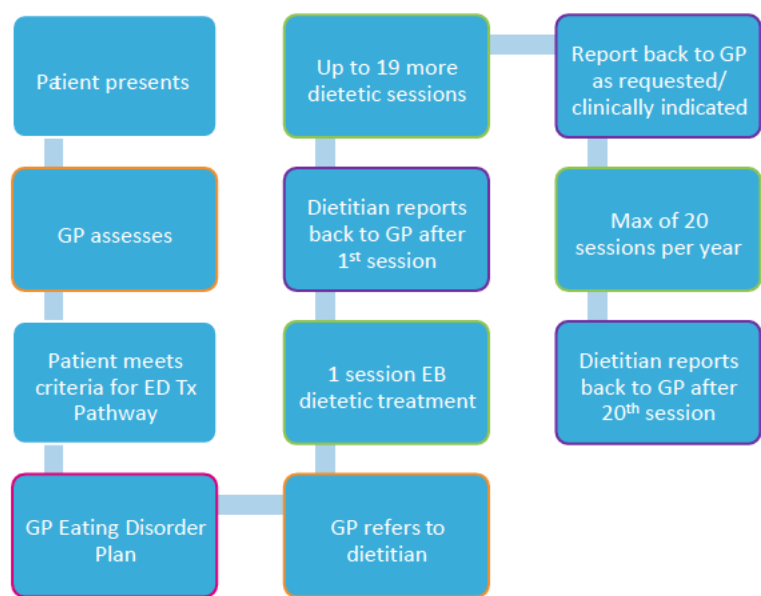
“Severe and complex” definition

- BN, BED or OSFED
- Greater than three episodes per week • Global EDE-Q score of 3 or higher
- At least two of the following:
 - Low body weight
 - Current or high risk of medical complications
 - Serious comorbid conditions
 - Overnight inpatient admission for ED in previous 12 months
 - Inadequate treatment response over past 6 months

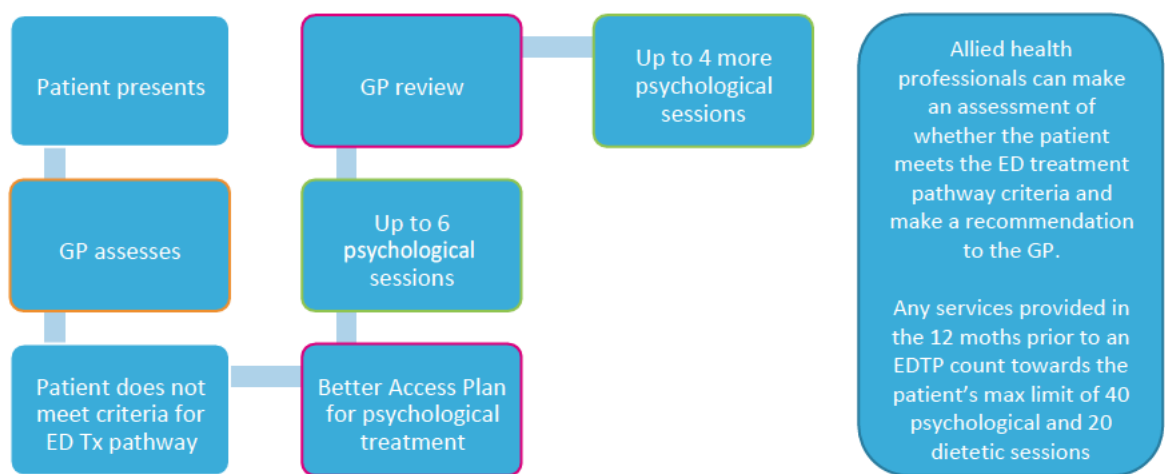
ED Tx Pathway - Psychological treatment: GP's role



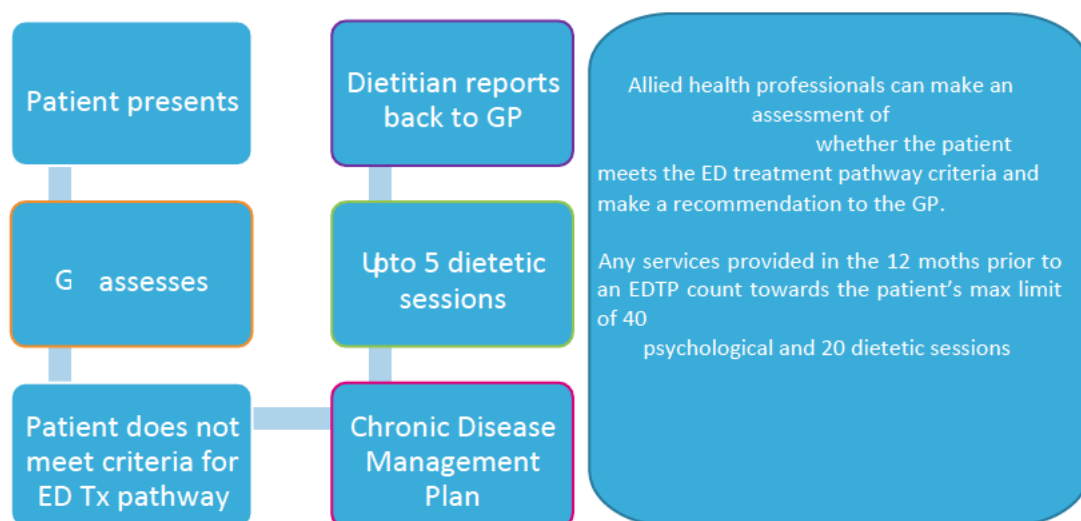
ED Tx Pathway - Dietetic services: GP's role



Other ED patients – minimum care



Other ED patients – dietetic services



Item numbers	MHST or Credentialed	Duration	Benefit 100%	Plan details
90250	NO	20-39 min	72.85	Written ED Tx and Mx plan which includes: a. Diagnosis b. Tx options and recommendations for the 12 months c. Outline referral options to AHP for mental health and dietetic services, specialists, etc (referred clinicians must be eligible to provide MBS services under Better Access for psychological treatment or Chronic Disease Management for dietetic services) d. Offer the patient & patient's carer (if any and if deemed appropriate with patient consent) a copy of plan and ED education
90251	NO	40 min and above	107.25	
90252	YES – MHST	20-39 min	92.50	
90253	YES – MHST	40min and above	136.25	
90264	Not specified	Not specified	72.85	Review ED TX and MX plan a. Treatment efficacy and evaluate with patient if it meets their needs b. Modifications to continue with Tx options in the plan or Alter treatment options in the plan with new arrangements a. Initiate referrals to psychiatrist or paediatrics as appropriate b. Offer the patient & patient's carer (if any and if deemed appropriate with patient consent) a copy of plan and ED education
90271	YES - FPS (in Consulting room)	30-39min	94.25	GP providing psychological services indicated in ED Tx and Mx plan.
90272	YES - FPS (out of consulting room, i.e. group session)	30-39 min	90271 \$26.35/Pt number seen up to 6 pts.	Specified evidence-based modalities: ☐ Family Based Treatment for Eating Disorders (EDs) ☐ Adolescent Focused Therapy for EDs

90273	YES - FPS (in Consulting room)	40 min and above	\$134.85	☐	Cognitive Behavioural Therapy (CBT) for EDs (CBT-ED)
90274	YES - FPS (out of consulting room, i.e. group session)	40 min and above	90273 Plus \$26.35/Pt number seen up to 6 pts.	☐	CBT-Anorexia Nervosa (CBT-AN)
				☐	CBT for Bulimia Nervosa and Binge Eating Disorder (CBT-BN, CBT-BED)
				☐	Specialist Supportive Clinical Management (SSCM) for EDs
				☐	Maudsley Model of Anorexia Treatment in Adults (MANTRA)
				☐	Interpersonal Therapy (IPT) for BN, BED
				☐	Dialectical Behavioural Therapy (DBT) for BN, BED
				☐	Focal psychodynamic therapy for EDs
90279	FPS via video conference	30-39 min	\$94.25		
90280	FPS via video conference	40 min and above	\$134.85		

→ <https://www.nedc.com.au/assets/Fact-Sheets/Cheat-sheet-for-GPs.pdf>

EDE-Q → https://www.credo-oxford.com/pdfs/EDE-Q_6.0.pdf

EATING QUESTIONNAIRE
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Instructions: The following questions are concerned with the past four weeks (28 days) only. Please read each question carefully. Please answer all the questions. Thank you.

Questions 1 to 12: Please circle the appropriate number on the right. Remember that the questions only refer to the past four weeks (28 days) only.

On how many of the past 28 days	No days	1-5 days	6-12 days	13-15 days	16-22 days	23-27 days	Every day
1 Have you been deliberately trying to limit the amount of food you eat to influence your shape or weight (whether or not you have succeeded)?	0	1	2	3	4	5	6
2 Have you gone for long periods of time (8 waking hours or more) without eating anything at all in order to influence your shape or weight?	0	1	2	3	4	5	6
3 Have you tried to exclude from your diet any foods that you like in order to influence your shape or weight (whether or not you have succeeded)?	0	1	2	3	4	5	6
4 Have you tried to follow definite rules regarding your eating (for example, a calorie limit) in order to influence your shape or weight (whether or not you have succeeded)?	0	1	2	3	4	5	6
5 Have you had a definite desire to have an <u>emaciated</u> stomach with the aim of influencing your shape or weight?	0	1	2	3	4	5	6
6 Have you had a definite desire to have a <u>gaudy</u> flat stomach?	0	1	2	3	4	5	6
7 Has thinking about food, eating or calories made it very difficult to concentrate on things you are interested in (for example, working, following a conversation, or reading)?	0	1	2	3	4	5	6
8 Has thinking about shape or weight made it very difficult to concentrate on things you are interested in (for example, working, following a conversation, or reading)?	0	1	2	3	4	5	6
9 Have you had a definite fear of losing control over eating?	0	1	2	3	4	5	6
10 Have you had a definite fear that you might gain weight?	0	1	2	3	4	5	6
11 Have you felt fat?	0	1	2	3	4	5	6
12 Have you had a strong desire to lose weight?	0	1	2	3	4	5	6

Questions 13-18: Please fill in the appropriate number in the boxes on the right. Remember that the questions only refer to the past four weeks (28 days).

Over the past four weeks (28 days)

13 Over the past 28 days, how many <u>times</u> have you eaten what other people would regard as an <u>unusually large amount of food</u> (given the circumstances)?	No	1-5 days	6-12 days	13-15 days	16-22 days	23-27 days	Every day
14 On how many of these times did you have a sense of having lost control over your eating (at the time that you were eating)?	0	1	2	3	4	5	6
15 Over the past 28 days, on how many <u>DAYS</u> have each episode of overeating occurred (i.e., you have eaten an unusually large amount of food and have had a sense of loss of control at the time)?	0	1	2	3	4	5	6
16 Over the past 28 days, how many <u>times</u> have you made yourself sick (vomited) as a means of controlling your shape or weight?	0	1	2	3	4	5	6
17 Over the past 28 days, how many <u>times</u> have you taken laxatives as a means of controlling your shape or weight?	0	1	2	3	4	5	6
18 Over the past 28 days, how many <u>times</u> have you exercised a "90" or "compulsive" way as a means of control (e.g., "I ate the shape, or amount of fat, or to burn off calories")?	0	1	2	3	4	5	6

Questions 19 to 21: Please check ☐ "yes" or ☐ "no". Please note that for these questions the term "times" is used to refer to the number of occasions, accompanied by a sense of having lost control over eating.

19 On the past 28 days, on how many days or you eaten in secret (i.e. furtively)? ... Do not count episodes of binge eating	No	1-5 days	6-12 days	13-15 days	16-22 days	23-27 days	Every day
20 On what proportion of the times that you have eaten have you felt guilty (felt that you've done wrong) because of its effect on your shape or weight? ... Do not count episodes of binge eating	None of the times	A few times	Less than half the times	Half of the times	More than half the times	Most of the times	Every time
21 Over the past 28 days, how concerned have you been about other people seeing you eat? ... Do not count episodes of binge eating	Not at all	Slightly	Moderately	Markedly			

Questions 22 to 28: Please circle the appropriate number on the right. Remember that the questions only refer to the past four weeks (28 days).

Over the past 28 days	Not at all	Slightly	Moderately	Markedly			
22 How much weight influenced how you think about (judge) yourself as a person?	0	1	2	3	4	5	6
23 How much weight influenced how you think about (judge) yourself as a person?	0	1	2	3	4	5	6
24 How much weight influenced how you think about (judge) yourself as a person?	0	1	2	3	4	5	6
25 How discomforted have you been with your stomach?	0	1	2	3	4	5	6
26 How discomforted have you been with your shape?	0	1	2	3	4	5	6
27 How uncomfortable have you felt seeing your body (for example, seeing your shape in the mirror, in a shop window reflection, while undressing or taking a bath or shower)?	0	1	2	3	4	5	6
28 How uncomfortable have you felt about others seeing your shape or figure (for example, in communal changing rooms, when performing, or wearing tight clothes)?	0	1	2	3	4	5	6

What is your weight at present? (Please give your best estimate.)
What is your height? (Please give your best estimate.)

If female: Over the past three-to-four months have you missed any menstrual periods?
If yes, how many?
Have you been taking the "pill"?

THANK YOU

The importance of having your antennae up: Common presentations that may surprise some GPs

- No single or easily identifiable cause
- Complex interplay of factors:
 - Biological
 - Psychological
 - Social
 - External



Causal or contributing factors

- **Individual**
 - Heritability; perfectionist or obsessional traits; stages of development; low self esteem; limited coping strategies; high personal expectations; history of trauma
- **Family and social**
 - Norms re disordered eating behaviours in family or peer group; pressure to achieve/succeed; activities that emphasise weight or shape (e.g. sports, dancing); focus on 'thin' or 'muscular' ideals; diet talk and dieting
- **Cultural and environmental**
 - Media and social media portrayal of ideal bodies; cultural emphasis on striving for perfection; valuing of appearance over other personal qualities; weight or shape-related teasing or bullying

Protective factors

- **Individual**
 - High self-esteem/confidence (not linked to appearance); positive body image; media literacy; emotional wellbeing; school achievement; assertiveness; socially well engaged; good problem solving and coping skills
- **Family**
 - Family connectedness; family does not overemphasise weight/appearance; eating regular meals with the family; modelling healthy eating and physical activity

- **Socio-cultural**

- Reduced emphasis on weight and appearance/accepting of a range of body shapes and sizes; occupation/industry does not place emphasis upon weight/appearance; social/peer relationships not overly concerned with weight/appearance



Early recognition

- Essential elements of *early recognition*
 - Warning signs (physical, psychological, behavioural)
 - Developing rapport
 - Screening

The Victorian Centre of Excellence in Eating Disorders (CEED, 2005)

Early recognition

- **High risk groups**

- Adolescents
- Women (particularly during key transition periods-pre/post natal
- menopausal)
- Women with Diabetes / Polycystic Ovarian Syndrome (PCOS)
- Athletes (physical activity with a focus on body shape)
- People with a family history of eating disorders – People seeking help for weight loss



Clinical examples

Take a minute to reflect on some of your patients that fall into one of these high risk groups

Have you considered an ED as a differential diagnosis?

Warning signs

- What hints are your patients giving you?
 - Verbal
 - Physical
 - Psychological
 - Behavioural
- As Rural GPs, family and significantly involved others can be key sources of information
- See www.nedc.com.au/support-and-services/supportingsomeone/understanding-the-warning-signs/



Role of the GP:

we are often the first point of contact

- Establish rapport - early diagnosis and intervention is key to improve outcomes
- Assess current physical and psychological state
- Establish safety - Physical and psychological
- Exclude underlying physical illness
- Appropriate referral
- Co-ordinate treating / care team
- **Ongoing monitoring of medical / psychological state**

Strategies for probing and engagement:

How to structure the initial consult

- Establish urgency of treatment
- New patient vs long-term patient – Presenting issue
 - Direct or indirect e.g. eating concerns vs physical complaints
- Medical tests / vital signs
- Book a follow-up / longer appointment



SCREENING: HEADSS for adolescents

- H – Home life/family
- E – Education/employment/eating/exercise
- A – Activities and peer/social relationships
- D – Drugs/cigarettes/alcohol
- S – Sexuality/relationships
- S – Suicide/depression/mood/safety/spirituality

Goldernring, J.M. & Cohen, E. (1988). Getting into adolescent's HEADSS, Contemporary Paediatrics, July, 75-90.

SCREENING: SCOFF

- S – Do you make yourself **sick** because you feel uncomfortably full?
- C – Do you worry you have lost **control** over how much you eat?
- O – Have you recently lost more than **one** stone (6.35kg) in a three month period?
- F – Do you believe yourself to be **fat** when others say you are too thin?
- F – Would you say **food** dominates your life?

Luck, A.J., Morgan, J.F., Reid, F., O'Brien, A., Brunton, J., Price, C., Perry, L., Lacey, J.H. (2002). The SCOFF questionnaire and clinical interview for eating disorders in general practice: comparative study, British Medical Journal, 325, 7367, 755 - 756.



SCREENING:SCOFF

- Current use / experience?
- Ideas for implementing in clinical practice?
- Comparison with using other risk assessments?

Clinical risks

- **Medical risk**
 - Dietary restriction and weight loss → Malnutrition → Medical instability
 - Dietary restriction and / or 'purging behaviour' (e.g. vomiting or laxative misuse) → Electrolyte disturbance / dehydration → Medical instability
- **Psychiatric risk**
 - Depression / Suicidality
 - Acute distress
 - Deliberate self-harm (DSH)



Medical monitoring

- Weight and BMI calculation (CDC charts if <20years)
- Pulse and blood pressure
 - Lying and standing
- Electrolytes-especially if engaging in purging
- Calcium, Phosphate, Magnesium, Zinc Vit D, iron studies & thyroid function
- Temperature
- ECG - bradycardia
- DEXA Scan if amenorrhoea > 6 months

Keeping the patient coming back:

Avoiding pitfalls from saying the wrong thing

- Key is to keep the patient engaged
- Developing a trusted therapeutic relationship-significant stigma and shame associated with ED
- Empathic and non-judgemental approach
- Doctor-patient relationship needs to be collaborative-working together as part of a team
- Acknowledge and validate the courage it takes to seek help and the struggle involved to stay motivated



Keeping the patient coming back

Avoiding pitfalls from saying the wrong thing

- Remember most patients are reluctant to open up at the first appointment - may be relieved to know the doctor is even thinking about an ED
- Ask open ended questions “some people... what is this like for you?”
- Focus on health and well being rather than eating and appearance
- Weight inclusive approach
- Keep the door open – emphasise you are available to talk about any concerns when the patient is ready

Red flags: Hospitalisation

- Acute risk/compromise requiring immediate / emergency assessment in hospital
 - Medical
 - Psychiatric
- Parameters vary depending upon clinical presentation
- *‘RANZCP Clinical Practice Guidelines for the Treatment of Eating Disorders’ 2014*



Referral and knowing your networks

- General Practitioner
- Paediatrician / Medical specialist
- Psychiatrist
- Psychologist, Social Worker, OT, Mental Health Nurse
- Family therapist
- Dietitian
- Practice Nurse
- ED Peer Workers
- **Parents / Family / Carers**

Referral and knowing your networks

- Research for yourself which mental health professionals and dietitians with ED expertise are accessible for your patients
- Do any offer telehealth consults as an option? (PHNs)
- Forge professional partnerships with these allied health providers - capacity for regular case conferences
- See if your PHN has a HealthPathway for Eating Disorders – service mapping may already have been done



Further resources

- Contact local, state or national Eating Disorder bodies to discuss treatment pathways (QuEDS, InsideOut, CEED, SEDS, WAEDOCS, ACT EDP, NEDC)
- All health professionals have access to the Butterfly Foundation Helpline to help you help your patients: 1800 ED HOPE or <https://www.thebutterflyfoundation.org.au/our-services/helpline/>
- ED clinician database and professional development opportunities at <http://www.anzaed.org.au/>
- International Conference on Eating Disorders ICED2020 next year in Sydney

Appendix 11

Achievements

“Your knowing a thing is nothing unless another knows you know it”

Aulus Persius Flaccus

In the process of completing this research project, I have had the fortune to be invited to present at a variety of symposiums and conferences to increase awareness of body image and eating disorders. Speaking at community forums and to secondary school students and their parents, as well as at medical symposiums and conferences to upskill fellow medical practitioners, has been a wonderful opportunity to raise awareness of this very serious group of illnesses. This increasing awareness and emphasis on early detection and appropriate management of people with eating disorders, along with the new raft of Medicare Item numbers introduced on November 1st, 2019, has piqued the interest of many of my colleagues so educating GPs has been a priority to support my fellow practitioners in better managing their patients and hopefully improving their quality of life and recovery rates.

I am grateful for the ongoing opportunities that this journey of learning and research has offered me, and hope that in some small way the ED module and workshops I am involved with delivering are in some way improving GPs capacity to better support their patients who are at risk of developing, or are in fact already living with established Eating Disorders.

TIMELINE OF PRESENTATIONS

03/09/2018 Presented seminar for parents and teachers on behalf of the Upper Yarra Body Image Group

“What do I say? What do I do?”-if you have concerns that someone you love may have body image issues” part of Body Image Awareness Week September 2018

05/03/2019 Body Image and Eating Disorders Awareness Week-Embrace movie screening and panel discussion for local secondary school students in the Upper Yarra Valley Victoria

02/09/2019 “Don’t judge a book by its cover” Weight stigma and the Weight Inclusive Approach in Action. Shire of Yarra Ranges, Lilydale, Victoria

25/10/2019 RACGP Annual conference-poster accepted

26/10/2019 RMA 19 co-presenter with the National Eating Disorders Collaboration at the annual Rural Doctors of Australia Conference “Eating Disorders: Practical Steps in Primary Care”. Helped develop a “Cheat Sheet” explaining the new Medicare Item Numbers introduced 01/11/2019 that has been disseminated across Australia and featured on both the EDV and NEDC websites. (Appendix 10)

13/11/2019 “Eating Disorders: Early Intervention and Community Treatment” Eating Disorders Victoria Day workshop for GPs and other health professionals in Traralgon, Latrobe Valley, Victoria

Three other medical practitioner and allied health workshops in conjunction with EDV had been scheduled for delivery over April 2020. One in Bairnsdale, Victoria and two in Tasmania: Launceston and Hobart. These unfortunately were postponed due to the Covid19 pandemic currently raging across the world.