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ORIGINAL RESEARCH

Evaluation of a pilot interprofessional education programme for eating disorder training in mental health services

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Objective. To evaluate the effectiveness of an Interprofessional Education (IPE) programme in eating disorders for mental health practitioners using a case-based learning approach.

Methods. A total of 25 mental health clinicians were asked to evaluate their IPE programme as part of training for the National Clinical Programme in Eating Disorders. They completed a Readiness for Interprofessional Learning Scale (RIPLS), a learner reaction questionnaire after each session and a final open evaluation at 4 months. Non-parametric statistical analysis was employed to analyse learner attitudes and reactions, and qualitative information was coded.

Results. A total of 23 (92%) clinicians from five disciplines participated. Baseline attitudes towards IPE were positive on all RIPLS subscales, and those with prior IPE experience had most positive views as to its benefits for teamwork and patient care ($p = 0.036$). Learner reactions on content, delivery, outcome and structure indicated that individual learning experience was strongly positively endorsed. Change in clinical practice behaviour was reported in terms of communication, clinical activity, outcome evaluation and confidence. Barriers included other demands on time, organisational support, not having enough patients or co-workers to practice skills, and knowledge differentials between learners.

Conclusions. IPE using a case based learning approach is an effective and acceptable means of developing specialist training across existing service, team and professional boundaries. It has potential for positive impact on knowledge, clinical behaviour and service delivery. Recommendations include the introduction of IPE group guidelines, wider circulation of learning points and content, and the use of self-competency ratings and reflective logs.

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Key words: Case-based learning, eating disorders training, interdisciplinary team, interprofessional education, programme evaluation.

Introduction

Eating disorders (ED) affect approximately three percent of the population and remain a significant challenge for mental health services (Thompson Brenner *et al.* 2012). They have an elevated risk of mortality, with anorexia nervosa (AN) having a standardised mortality ratio of 5.86 (Arcelus *et al.* 2011). Approximately 10% of AN sufferers will die within 10 years of onset, from self-starvation, physical complications or suicide (Steinhausen, 2009). After asthma and obesity, ED remain the third most common chronic illness in adolescents (Chamay-Weber *et al.* 2005).

The cost can be enormous. An economic analysis in the United Kingdom estimated the total cost at £1.4 billion/annum when healthcare, DALY's, GDP and economic burden are included (BEAT, 2012). With recent advances in evidence-based treatment, up to 50% can make a full recovery (Lock *et al.* 2015). Conversely, an inadequately skilled workforce has been cited as contributing to poor clinical outcomes, patient dissatisfaction, disengagement from treatment, costs and increased inpatient admissions (Gowers *et al.* 2010).

In 2013, this led to the Health Service Executive (HSE) prioritising ED as one of three National Clinical Programmes in Mental Health. The aim was to develop a skilled clinician workforce to provide specialised ED treatment across the public mental health service. Nationally, multidisciplinary clinicians were identified from each community mental health team (adult and child) in order to develop ED treatment at local level. The next step was training, and this too was a challenge. There are literally hundreds of treatments mooted for ED, and few are evidence based. In addition, few of the many training courses that exist have been evaluated educationally or provide a comprehensive

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biopsychosocial perspective. Subsequent clinician adherence to working in evidence-based models has been shown to be poor (Waller *et al.* 2012).

The HSE has resourced specific training for the two most effective and evidence-based psychological treatments for adolescents and adults (family-based therapy and Cognitive Behaviour Therapy for Eating Disorders (CBT-E), respectively). However, comprehensive ED is more complex than psychological therapy, and spans primary care, community mental health, medical, paediatric and psychiatric inpatient services, with psychiatrists, psychologists, paediatricians, physicians, general practitioners, dieticians, family therapists and nursing, etc., all playing a role at different times.

One of the key findings from the patient safety literature of the last 20 years is that poor interprofessional communication and care coordination are major contributors to medical errors, patient dissatisfaction and non-implementation of evidence-based medicine on the ground (Stephen *et al.* 2012). Up to 50% of these are preventable (DeVries *et al.* 2008). ED treatment is no different, and systemic errors, poor decision-making and communication have all been associated with poor outcomes, patient risk and dissatisfaction. (Royal College of Psychiatrists 2012, 2014).

In order to address this, the World Health Organisation (WHO) has strongly endorsed Interprofessional Education (IPE), as the cornerstone of collaborative working, patient outcomes and safety across healthcare, and it has a well-established evidence base (WHO, 2010). IPE is particularly relevant for ED services where, as mentioned above, specialised treatment is often systemically complex and must be collaborative (Carter *et al.* 2003; Lock *et al.* 2015). The multidisciplinary nature of the HSE's clinical programme in ED is a unique opportunity to explore its potential for real world effectiveness. In addition, IPE has the potential to overcome some of the powerful barriers to the dissemination of evidence-based practice at local team level, such as unidisciplinary education, interdisciplinary rivalries and stereotyping (Ferlie *et al.* 2005, Zwarenstein & Reeves 2006)

IPE

IPE is '*when two or* more professions learn with, from and about each other to improve collaboration and the quality of care' (CAIPE, 2002). Key is that IPE is interactive, that it is more than just two different professions sitting in a room and learning in parallel. It is informed by insights from adult learning theory (Knowles, 1973), the contact hypothesis (Allport, 1954; Hean *et al.* 2005), social identity theory (Tajfel, 1981, Burford, 2012), reflective practice (Brookfield, 1995) and the concept of uncovering what we do not know (Luft, 1955) (Fig. 1).

As well as better patient outcomes, continuing IPE known as CIPE has been shown to lead to significant improvement in clinician attitudes towards teamwork, institutional support, job satisfaction, work conditions and safety awareness and openness (Morey *et al.* 2002; Dieleman *et al.* 2004; Bleakley *et al.* 2012; Priest *et al.* 2008). From a service development perspective, CIPE has also been shown to translate into to better patient services and more highly skilled clinicians (Lee *et al.* 2013).

Educational evaluation of IPE

The purpose of educational evaluation in healthcare is to ensure that training needs are met, that teaching gaps are identified, to provide feedback, to inform development and resource allocation, and to articulate what is valued (Morrison *et al.* 2003). In IPE, additional learning outcome domains are: teamwork skills, roles and responsibility (own and those of others), two-way communication, learning and critical reflection (regarding team and work), patient needs and relationship (collaboration, patient as partner), and ethical practice (understanding and holding valid the views of others) (WHO, 2010). In the context of the complexity of ED

Open Self:	**Blind Self**:
Known to all	Known to others, not to self:
Log it- No need to include at IPE	Learn it from others at IPE
Hidden Self	**Unknown self**
Known to self, not others:	Known to none of the group:
Teach it at IPE	Less likely due to variety of attendees
	at IPE- Guest speaker if uncovered

Fig. 1. A Johari window concept model adapted for Interprofessional Education (IPE; Luft and Ingham, 1955)

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Fig. 2. Kirkpatrick/Barr's hierarchy of evaluation in Interprofessional Education (adapted from Wall, 2007).

treatment, it is essential to evaluate these components of any training.

IPE is complex to evaluate and so traditional models have been adapted to reflect this (Barr, 2009) (Fig. 2). The higher on the pyramid, the greater educational impact and quality. However, lower levels are the essential building blocks to achieving this, for example, attitude and participation are necessary for behavioural change.

The ED perspective

The research on evaluation of ED training is very limited, especially with regard to IPE. Pettersen *et al.* (2012) studied 207 participants at an 18-month ED programme based in Norway, and found via qualitative analysis that the learners from multiple disciplines reported developing 'clinical confidence' in areas of interpersonal interventions, competency and organisation. Heath *et al.* (2013) conducted a pilot evaluation of a 2-day IPE workshop for ED in Canada. Attendees reported an increase in knowledge, confidence, interprofessional attitudes and perceptions on standardized measures. Unfortunately, only 26.5% of the original group responded to the follow-up in this study, so it is unknown if this was sustained. Finally, a recent Australian study of 130 psychiatry undergraduates found that case-based learning (CBL) was as effective as problem-based learning for learning about ED (Katsikitis *et al.* 2002).

Aims and objectives

The aim of this study was to evaluate the acceptability and impact of a CIPE programme for providing specialist training in ED using a CBL approach. A secondary aim was to explore the factors that underlie these findings, and to make related recommendations for further educational practice.

Methods

Subjects

Multidisciplinary mental health clinicians from Child and Adolescent Mental health Service (CAMHS) and adult Community Mental Health Teams (CMHTs), who attended their local CIPE programme in ED from March 2014 to June 2014 as part of the HSE national clinical programme, were invited to participate. There were no exclusion criteria.

Setting

The group met for 2 hours each month, and a total of five CIPE sessions took place during the study period. The researcher designed the programme, and in line with best IPE standards each session was facilitated by rotation, and the attendees also steered content and cases (CAIPE, 2002). The case discussion was the core component of each session, where participants brought anonymised complex cases they were working with, for presentation, discussion, reflection and advice.

Study instruments

Study instruments were chosen to enable educational evaluation of the interprofessional nature of the course (Fig. 2).

The Readiness for Interprofessional Learning Scale (RIPLS) measured pre-existing attitudes of attendees towards IPE (Parsell *et al.* 1999). Its psychometric properties have been evaluated extensively (MacFadyen *et al.* 2005). The version used has excellent internal consistency for the total scale (α = 0.84–89), and good

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internal consistency for the subscales. Respondents score themselves on a five-point Likert scale on a series of 19 statements. Results yield a total score and four subscales: teamwork and collaboration, negative professional identity, positive professional identity and roles and responsibility.

Learner reaction questionnaire

Learner reaction was evaluated using an adaptation of the Short Demand Driven Learning Model Evaluation Tool (MacDonald *et al*. 2002). Originally developed for web-based IPE, it was chosen here for its face validity and psychometric properties [robust validity and excellent internal consistency (0.93–0.97)]. However, in order to improve feasibility and acceptability, the shorter version was used in this study, with items specific to web learning excluded. This yielded a 19-item Likert questionnaire that mapped into four subscales: content, superior structure, delivery and outcomes (Breithaupt *et al.* 2006).

Four-month evaluation

At 4 months, candidates were given an open response series of prompts regarding the impact of the programme on aspects of their clinical work and any barriers that they had encountered. The prompts were taken from an interview schedule developed by Garrard *et al*. in 2006, which was adapted for an ED setting for the purpose of this study.

Data collection

The RIPLS and learner reaction questionnaires were distributed in paper form and collected at the end of each session. They were stored in a secure location until the analysis stage began after the last session. At that time the final questionnaire was sent to all participants via Survey Monkey. All stages were anonymised with participants using an identifier known only to them, in order to record multiple attendances

Data handling and analysis

The RIPLS and learner reaction scores were input into EXCEL and analysed using STATA. Missing data was recoded as 'three', that is, a neutral response. The Shapiro–Wilk test for normality of the data indicated a significant non-normal distribution for one subscale of the learner reaction scale ($z = 1.73$, $p = 0.04171$). Because of this and the small sample size, non-parametric testing was used (Petrie *et al.* 2009). However, Means were also calculated for learner reaction subscales as some were normally distributed. In order to account for clustering (i.e. that some participants had attended multiple times), scores for multiple attendances for the 'Learner Reaction' questionnaire were collapsed upon their mean score.

Results were compared between those with and without prior IPE experience using the Wilcoxon rank sum test for two unpaired groups, where the null hypothesis (H_0) assumed no difference. The Kruskal–Wallis test was used to compare response styles across the disciplines, for which χ^2 and p values were calculated.

Analysis of the open questionnaire

The final evaluation questionnaire was in open response format, and so was not suitable for quantitative analysis. Responses were systematically indexed, coded, summed and interpreted categorically where possible.

Ethical approval

Ethical approval for this study was obtained from the Biomedical and Scientific Research Ethics Committee, University of Warwick and from the Clinical Research Ethics Committee of the Cork teaching hospitals.

Results

Participation and session characteristics

A total of 25 clinicians attended the IPE at least once over the study period (seven from adult services,

Table 1. *Readiness for Interprofessional Learning Scale (RIPLS) questionnaire total and subscale (**n** = 20)*

RIPLS Subscale	Median	Range	Possible scores
Teamwork and collaboration	43.5	37–45	9–45
Negative professional identity	11	9–15	3–15
Positive professional identity	18	15–20	4–20
Roles and responsibility	9	7–12	3–15
RIPLS total	81.5	71–91	19–95

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Table 2. *Impact of prior experience of IPE on attitudes*

RIPLS Subscale	Prior IPE (n = 14)		No Prior IPE (n = 6)		z score[a]	p value
	Median	Range	Median	Range		
Teamwork and collaboration	44.5	39–45	39.5	37–45	−2.09	0.036[a]
Negative professional ID	11	9–15	11	10–12	−0.51	0.61
Positive professional ID	18	16–20	17	15–20	−1.06	0.29
Role and responsibilities	9	7–12	8.5	8–9	−1.84	0.067
RIPLS total	83.5	71–91	76	71–85	−1.9	0.058

IPE, Interprofessional Education; RIPLS, Readiness for Interprofessional Learning Scale.
[a]Two sample Wilcoxon rank sum (Mann–Whitney test) adjusted for ties.

Table 3. *Analysis of Readiness for Interprofessional Learning Scale (RIPLS) score differences by profession*

RIPLS subscale	df	χ^{2a}	p
Teamwork and collaboration	5	1.32	0.933
Negative Professional identity	5	4.0	0.549
Positive professional identity	5	1.7	0.889
Role and responsibilities	5	2.82	0.727
Total RIPLS	5	0.84	0.974

[a]Kruskal–Wallis χ^2 statistic adjusted with ties. 5 df.

18 from CAMHS), and the attendance rate was 72.1%. In all, 23 (92%) participated in the study by completing at least one questionnaire. The experience of the total group in working with ED ranged from 0 to 20 years. All were female, and 18 identified their professional discipline (psychology, psychiatric nursing, child psychiatry, social work/ family therapy, occupational therapy) – five left this question blank. A total of 10 clinical cases were presented over the timeframe by eight clinicians (32%) from across five disciplines.

Attitudes towards IPE

Medians and ranges for the RIPLS questionnaire are presented in Table 1, and attitudes to IPE were strongly positive with a median 'Total Score' of 81.5/95 (r = 71–91). Scores were particularly high for the teamwork and collaboration subscale (median = 43.5/45, r = 37–45) and for positive professional identity (median 18/20, r = 15–20). Scores for negative professional identity (the importance of clinical problem solving together for patients were good (median = 11/15, r = 9–15), but here a very high score indicates that cooperative learning is not as valued as uniprofessional learning. Attitudes were also positive but not too high for the roles and responsibilities subscale, where again a very high score indicates unclear or distorted attitudes about professional and team roles.

There was a statistically significant difference at p = 0.0363 for the teamwork and collaboration subscale between those with and without prior experience of IPE, with the less experienced clinicians scoring lower (Table 2). A similar tendency was found for roles and responsibilities awareness and the Total RIPLS score, though these fell just short of statistical significance. No significant difference was found in attitudinal style between the clinical disciplines (Table 3).

Learner reactions

A total of 22 (88%) of attendees completed at least one learner reaction questionnaire, yielding a total of 46 questionnaires from their 49 attendances (93.9% return). Overall, learner reactions for the total scale were very positive with only 5% (21/418) of total statements (22 individuals × 19 items) being negative and 6.6% (29/418) being neutral (Table 4). Two-thirds of the negative responses related to item 11 'replaced in work to attend'.

In terms of the content subscale, participants were strongly positive about the training, and all the neutral responses relating to question four (tasks similar to what I have in work). In terms of delivery, 91% of responses were positive, but 'language was difficult to understand' was endorsed with one negative and one neutral response.

There was also a strongly positive reaction in the total Outcome subscale where the group mean was m = 13.23/15, ±1.27. All agreed or strongly agreed that it had met their expectations and held their interest, and 19/22 (86.4%) thought that it would help them practice what they had learned (the rest were neutral). An individual who scored the content to be 'boring' in item 1, also scored highest for the item 'it kept my interest' which may indicate confusion over the reverse scoring on item 1.

A majority of participants (n = 17, 77.3%) agreed or strongly agreed that their team/organisation had supported their attendance, but three (13.6%) were

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Table 4. *Learner reactions*

Item number	Item	Mean	S.D.	Median	Range
1	The material in this session was boring	1.36	0.95	1*	1–5
3	Info. I will be able to use at work	4.5	0.6	5	3–5
4	Tasks similar to those I have at work	3.82	0.85	4	2–5
5	Information I need in my work	4.32	0.57	4	3–5
6	Enough information on resources	4.14	0.83	4	2–5
9*	The content was too difficult	1.41	0.91	1*	1–5
Total content score (with 1.9 reversed)		26/30	2.58		
2	Appropriate participation	4.59	0.67	5	3–5
7	Content was well organised	4.45	0.51	4	4–5
8*	Language I didn't understand	1.5	0.8	1*	1–4
Total delivery score with item 8 reversed		13.55/15	1.22		
12	Help me practice what I learned	4.09	0.61	4	3–5
15	Kept my interest	4.68	0.48	5	4–5
19	Was in line with my expectations	4.45	0.51	4	4–5
Total outcome score		13.2/15	1.27		
10	Support from my team/organisation	4.36	0.79	5	3–5
11	Replaced at my workplace to attend	1.95	1.13	2	1–5
Total service score		6.32/10	1.36		
13	Gave opportunity for self-reflection	4.27	0.46	4	4–5
14	Supported the learning objectives	4.5	0.6	5	3–5
16	Met my learning needs	4.55	0.51	5	4–5
17	Respected my level of knowledge	4.5	0.51	4.5	4–5
18	Respected my level of experience	4.5	0.6	5	3–5
Total superior structure score		22.3/25	2.12		

*Negatively worded items.

Table 5. *Differences in learner reaction between the professions*

Learner reaction	df	χ^{2a}	p
Content	5	2.83	0.7267
Delivery	5	3.06	0.6911
Outcome	5	10.96	0.0522
Service support	5	2.63	0.7571
Superior structure	5	5.73	0.333
Total	5	5.75	0.3315

[a]Kruskal–Wallis analysis. χ^2 adjusted with ties, 5 df (only one subgroup contained more then five observations).

neutral on this, and two (10%) disagreed. More significantly, only six (27.3%) felt that they had been replaced enough in their other duties to attend.

Finally, in terms of 'Superior Structure', all agreed that the IPE sessions had given them opportunity for self-reflection, with 16 (72.7%) strongly agreeing with this statement. All endorsed the view that the sessions supported their learning needs and respected their level of knowledge. All but one felt that it respected their level of experience. The total mean score for this subscale was 22.32/25 (±2.12), with medians between four and five for all items.

There was no statistically significant difference between the clinical disciplines or those who did not name one (Table 5). The Outcome subscale came closest to significance here at $p = 0.0522$, where the highest scores were from the social workers (28/30, r = 25–28), and the lowest were from the occupational therapists (25/30, r = 24–29).

Four-month evaluation

In all, 20 (80%) of the 25 clinical staff who attended an IPE session went on to complete the 4-month open question evaluation. Details of the percieved impact of the CIPE programme on their clinical practice and any barriers are displayed in Fig. 3. In all, 14 (70%) had engaged in new educational reading, with 12 (60%) giving specific reading resource recommendations. Eight (40%) mentioned that they now had a better understanding of how the other disciplines worked and of their roles, particularly regarding dietetics and family therapy, and of how they could work collaboratively. Eight (40%) also mentioned that it helped them understand how to manage complex cases, with five (25%) finding it helped them manage their caseload better. In all, 18 (90%) had communicated collaboratively about cases with other professionals

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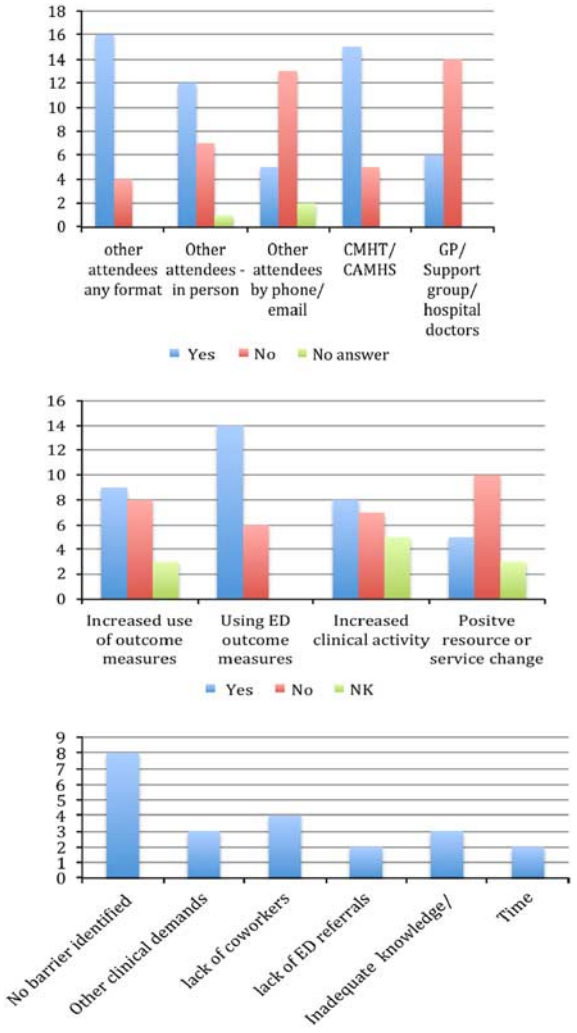

Fig. 3. Perceived impact of continuing Interprofessional Education on clinician behaviour and associated barriers (y axis = number of participants). GP, general practitioner; ED, eating disorder; CAMHS, child and adolescent mental health service; CMHT, adult community mental health team.

outside of the meetings, and this was linked to higher attendance (mean = 2.14 connection types versus mean = 1.113 for the whole group) (see Fig. 3). Increased clinical activity (screening, assessing, consulting, treating) and outcome evaluation were reported by almost half. Of the five who did not notice any changes, two had attended once, one said it was not a special interest and two (10%) said they were already engaged in these behaviours.

Key barriers to attending and implementing IPE are also displayed. Only five (25%) reported an increase in ED resources on their teams during the study period, and for three this involved more manuals only. Conversely, three (15%) reported a decrease in MDT (Multidisciplinary team) colleagues to co-work cases. Overall, eight (40%) had not encountered a barrier to their development of their ED skills.

Discussion

Learner attitudes and participation in CIPE

In terms of attitudes, this group indicated very positive attitudes towards CIPE as endorsed on the RIPLS, and the 72% attendance rate is comparable to the 78% rate found for optional IPE in a mental health setting (Young *et al.* 2005). Coupled with the level of volunteerism in presenting cases (36%), these are all indicative of positive prior internal motivation in the group and an openness towards interprofessional learning. There is significant overlap in clinical models and co-working in effective community mental health teams, and knowledge about roles and collaboration may have already been established. The finding that less experienced clinicians of CIPE scored lower on the teamwork and collaboration scale was similarly reported by Tunstall-Pedoe *et al.* (2003). It may be that more recently qualified clinicians have not yet experienced or fully developed their own concept of interprofessional collaboration in order to frame it into a specialist setting. This lends strong support to the view of the WHO framework that IPE begin at undergraduate level (WHO, 2010). Reeves *et al*. (2009) in a systematic review of IPE, notes that females hold more positive attitudes towards the benefits of collaborative work than males, and this may also have been a factor here.

Learner reactions

The participants strongly endorsed CIPE sessions and the use of a CBL approach in training in ED. This is consistent with Thistlethwaite *et al.*'s (2012) finding that health clinicians tend to have a positive reaction to IPE in a CBL format, which seems to aid both the development of applied reasoning skills and also deeper, more active learning in a real world context. Given that case complexity and safety arises very commonly in working with the ED patient group, this approach may be particularly suited to the complexity of learning needed.

From an interprofessional perspective, the level of interactivity in the sessions was particularly positively received, (median score of five). Combined with the reported positive impact of learning from others, and volunteerism in presenting, this suggested that the adult learning 'shared ownership' model worked well and was highly acceptable. Curran *et al.* (2008) questioned whether the group process of IPE and CBL is a key mediator of learner satisfaction, and it may be that this is the case here, where patient focus, group learning and interprofessional interaction all entwined into a positive learning experience. Many of this group had not

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worked together or met before and the interactive format may have enabled them to 'form' and 'storm' while also to demonstrate their professional identity through rotating the presenter and feedback roles (Tuckmann, 1965). This may have enabled risk and safety group issues in the IPE to be gradually addressed through presenting and giving feedback in an interplay of 'teacher' and 'learner' roles. Interestingly, six of the eight participants who presented cases were the clinicians experienced with a lot of ED experience, and this may indicate that a greater confidence and experience enables individuals to participate more fully, whereas less experienced clinicians initially take a more observer stance. This has implications for the development of specialist clinical programmes and collaborative working on them across services and teams.

Even without a fixed curriculum, the CBL format was effective in steering the group across discipline, service and experience to common learning threads to which they could all relate. Pre-existing concerns that the group had very different initial learning requirements were not borne out in this study and did not undermine the sessions. However, the finding that one participant found that the content was challenging and another that the language hard to understand, suggests the need to be alert to this issue.

Change in knowledge and attitude

We can conclude that attitudes about IPE and collaboration remained positive over the 4 months. For example, of the 68 final comments made about the programme, none were negative. When collaboration and attitudes are viewed as processes and not as discrete events, then this group is continuing a positive trajectory of valuing and understanding collaborative work. In terms of ED, as Thistlethwaite *et al.* (2012) noted 'the use of authentic clinical cases' in CBL links theory to practice and was most appreciated by learners. A number of the attendees perceived an increase in clinical confidence at the 4-month stage as bring as a result of the IPE programme, and this is similar to aforementioned findings of Pettersen *et al.* (2012). As there was no formal assessment of competency in this study, we can hypothesise that this confidence may relate to the development of a sense of membership within a special interest group, the complexity of the case discussions, the giving and getting feedback that is valued, with experienced clinicians.

The perception of acquiring knowledge and understanding was the key impact that all but one learner had noticed over the five IPE sessions, and diversity of knowledge and perspective was strongly respected by the group. Heath has found that statistically significant increases in self-reported knowledge when coupled with increased confidence, is a key factor in predicting behavioural change (Heath *et al.* 2013). The use of regular formal reflective logs and feedback forms, may enhance this as the group progresses, while their motivation and engagement may be maintained by asking all to share relevant supplementary material, for example, literature, reference lists, tools. Optional tutorials on special topics for those who identify specific gaps.

Professional behaviour and patient impact

The finding that more attendance results in more communication and collaborative pathways about ED cases outside of the sessions is an important finding in terms of the dissemination of knowledge and patient impact for the clinical programme. This may relate to increasing confidence, awareness of the importance of collaborative care or that group membership that in itself caused a change in behaviour, relationships having been formed. Of note, there have been no role requirements finalised by HSE in this regard to date.

That almost half of attendees attributed their increased use of clinical outcome evaluation tools to attending the sessions, when paired with increased scientific reading (70%) and sharing of recommendations, strongly supports the conclusion that the IPE programme has been educationally effective in enhancing professional development behaviours. From a patient perspective, the increase in clinical activity in ED, with more than half of those (25%) attributed this to the IPE programme, as well as reported changes in clinics and referral pathways and outcome evaluation, is also supportive of the potential for improved patient care and outcomes through IPE over a longer period.

Barriers to implementation

This IPE training was not compulsory and this is commonplace in clinical services (Reeves *et al*. 2009). However, if the aim of the national clinical programme is to enhance patient access to specialised ED treatment at local level and to improve outcomes, then this needs to be considered carefully so that all patients with ED can equally benefit no matter where they live. The literature identifies that a number of systemic barriers to attendance at IPE programmes can play a role in undermining it at local level. This includes professional stereotyping and professional resistance (Ferlie *et al.* 2005; Ateah *et al.* 2011; Curran *et al.* 2007) and different clinical demands for mental health staff (Vostanis *et al.* 2012; Mancini *et al.* 2013). At an individual level, non-attenders at IPE risk being in the 'Blind' quadrant with regard to learning from others (Fig. 1), reinforcing negative assumptions and also undermining collaborative patient care and dissemination of best practice.

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Table 6. *Recommendations for continuing Interprofessional Education (CIPE) development based on study findings and the literature*

Prior to the CIPE session
- Use of a competency tool (preferably standardised) to allow learners to identify their own learning needs and gaps.
- Explicit ground rules around confidentiality, respect, principles of feedback (Pendleton), diversity, collaborative goals, etc. to enhance safety.
- Circulation of key information about Interprofessional Education to clinicians, so that they understand its collaborative objectives.
- Planned time for informal contact – this will enhance safety and group cohesion.
- Non-rostering works well in ensuring that what comes up in sessions is challenging, authentic and practical.

During the CIPE session
- Use of a case-based learning format that all learners recognise and understand, for example, presentation followed by discussion, with explicit learning objectives/dilemmas at the outset, whiteboard or PowerPoint to present – clear expectations for all.
- The coordinating facilitator/teacher should stay present and actively aware of those who are not engaging during the session. Steer the discussion towards drawing them in while the session is in process – learners may become ambivalent or not come next time otherwise.
- Formulation by the facilitator of the discussion into a learning arc towards the end of the session so that those who have become lost can pick out some key learning points to take away with them for their needs.
- Continually make explicit the links between the case discussion, theoretical principles and evidence base.

After the CIPE session
- Introduction of a reflective log for all attendees including presenters.
- Circulation of any related supplementary material by email, including to those who did not attend.
- Circulation of a summary of the key learning points/frameworks by email after each session including to those who did not attend. This can be used as a framework for feedback to local teams.
- Introduction the use of a standardised feedback form for learners in order to spot barriers as they arise. This can explicitly encourage formative on-going evaluation and refinement of the education programme.
- As lead coordinator, planning of time before and after to formally reflect on the session as a teacher. This may include planning a few minutes afterwards with the clinician who presented the case in order to debrief.
- Summary of the key topics, feedback and schedule every so often for local managers and heads of discipline, so that they are aware of the work and its potential outcomes for patient care, and so will support staff to attend.

Strategies such as circulating a summary after each meeting, telephone check in to low attenders and formally updating local heads of disciplines about the programme may all serve to manage this risk.

A final important finding of this study was that 40% had not made changes to their clinical practice with reasons such as ED not being of special interest, not having an adequate ED caseload or not having co-workers to work with. Vostanis *et al.* (2012) found similarly that resource limitations and training gaps undermine the practical application of IPE in a CAMHS setting. Knowledge translation into the workplace is, at a fundamental level, a function of resource as well as educational effectiveness, and barriers due to the former undermine the latter. This highlights again the importance of regular communication about the clinical programmes to local managers and clinical leads, who are in a position to support the allocation of resources and the development of expertise. It also raises the issue of specialist hubs for clinical programmes that focus on less common conditions, in order to provide the structural means for clinicians to enhance their expertise.

From a clinical education and practice perspective, a number of suggestions can be made based on the findings for the consideration of any clinician who is planning IPE in clinical services (Table 6).

Limitations

Although the participation rate was high in the analysis, this was a pilot study with relatively small sample size. However, the wide variety of disciplines, experience, teams and services that participated deepen its generalisability and relevance within a clinical programme context nationally.

The evaluation was also limited by its timeframe, and it is too early to evaluate its longer-term impact on

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clinical practice. The on-going use of patient satisfaction questionnaires, clinical audit and clinical outcomes will be worth exploring with the IPE group in this regard. Finally, a third limitation of this study is that the measures obtained were self-reported, and therefore a proxy that may not reflect real clinical outcomes or behaviours. Measures taken to minimise this included prioritising anonymity over the gathering of demographic information, and the use of reliable and validated study instruments.

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Conflicts of Interest

None.

Ethical Standards

The authors assert that all procedures contributing to this work comply with the ethical standards of the relevant national and institutional committee on human experimentation with the Helsinki Declaration of 1975, as revised in 2008. The study protocol was approved by the institutional review board of each participating institution. Written informed consent was obtained from all participating patients.

References

Allport G (1954). *The Nature of Prejudice*. Perseus: MA.

Arcelus J, Mitchell A, Wales J, Nielsen S (2011). Mortality rates in patients with anorexia nervosa and other eating disorders. *Archives of General Psychiatry* **68**, 724–731.

Ateah C, Snow W, Wener P, MacDonald L, Metge C, Davis P, Frieke M, Ludwig S, Anderson J (2011). Stereotyping as a barrier to collaboration: does interprofessional education make a difference? *Nurse Education Today* **31**, 208–213.

Barr H (2009). An anatomy of continuing interprofessional education. *Journal of Continuing Education in the Health Professions* **29**, 147–150.

B-EAT & Pro Bono Economics (2012). Costs of eating disorders in England: economic impacts of anorexia nervosa, bulimia nervosa and other disorders focusing on young people (http://www.probonoeconomics.com/sites/probonoeconomics.com/files/files/reports/PBE%20BEAT%). Accessed 20 February 2014.

Bleakley A, Allard J, Hobbs A (2012). Towards culture change in the operating theatre: embedding a complex educational intervention to improve teamwork climate. *Medical Teacher* **34**, e635–e640.

Breithaupt K, MacDonald C (2006). Quality standards for e learning: the demand driven learning model. In *Online Assessment, Measurement and Evaluation: Emerging Practices* (ed. D. Williams, S. Howell and M. Hrinko), pp. 45–60. Information Sciences publishing: United Kingdom and United States of America.

Brookfield S (1995). *Becoming a Critically Reflective Teacher*. Jossey Bass.

Burford B (2012). Group processes in medical education: learning from social identity theory. *Medical Education* **46**, 143–152.

Carter S, Garside P, Black A (2003). Multidisciplinary team working, clinical networks, and chambers: opportunities to work differently in the NHS. *Quality and Safety in Health Care* **12**, i25–i28.

Centre for the Advancement of Interprofessional Education (2002). Defining IPE www.caipe.org.uk/resources/defining-IPE. Accessed 20 August 2013.

Chamay- Weber C, Narring F, Michaud P (2005). Partial eating disorders among adolescents: a review. *Journal of Adolescent Health* **37**, 417–427.

Curran V, Sharpe D, Foristall J (2007). Attitudes of health sciences faculty members towards inter professional teamwork and education. *Medical Education* **41**, 892–896.

Curran V, Sharpe D, Foristall J, Flynn K (2008). Student satisfaction and perceptions of small group process in case-based interprofessional learning. *Medical Teacher* **30**, 431–433.

De Vries EN, Rambatten MA, Smorenburg SM, Gourna DJ, Boermeester MA (2008). The incidence and nature of in-hospital adverse events: a systematic review. *International Journal for Quality in Health Care* **17**, 216–223.

Dieleman S, Farris K, Feeny D, Johnson J, Tsuyuki R, Brilliant S (2004). Primary health care teams: team member's perceptions of the collaborative process. *Journal of Interprofessional Care* **18**, 75–78.

Ferlie E, Fitzgerald L, Wood M, Hawkins C (2005). The nonspread of innovations: the mediating role of professionals. *Academy of Management Journal* **48**, 117–134.

Garrard J, Choudary V, Groom H, Dieperink E, Willenbring M, Duefey J, Ho S (2006). Organisational change in the management of Hepatitis C: evaluation of a CME program. *Journal for Continuing Education in the Health Professionals* **26**, 145–160.

Gowers S, Clarke AF, Roberts C, Byford S, Barrett B, Griffiths A, Edwards V, Bryan C, Smethurst N, Rowlands L, Roots P (2010). A randomised controlled multi centre trial of treatments for adolescent anorexia nervosa including assessment of cost- effectiveness and patient acceptability. *Health Technology Assessment* **14**, 1–98.

Hean S, Dickenson C (2005). The contact hypothesis: an exploration of its further potential in interprofessional education. *Journal of Interprofessional Care* **19**, 480–491.

Heath O, English D, Simms J, Ward P, Hollett A, Dominic A (2013). Improving collaborative care in managing eating

https://doi.org/10.1017/ipm.2015.61 Published online by Cambridge University Press

disorders: a pilot study. *Journal of Continuing Education in the Health Professions* **33**, 235–242.

Katsikitis M, Hay P, Barrett R, Wade R (2002). Problem- versus case- based approaches in teaching medical students about eating disorders: a controlled comparison. *Journal of Experimental Educational Psychology* **22**, 277–283.

Knowles M (1973). The Adult Learner: A Neglected Species. Gulf Publishing: Houston Texas.

Lee L, Weston W, Hillier LM (2013). Developing memory clinics in primary care: an evidence-based interprofessional program of continuing professional development. *Journal of Continuing Education in the Health Professions* **33**, 24–32.

Lock J, La Via MC, AACAP (2015). Practice parameter for the assessment and treatment of children and adolescents with eating disorders. *Journal of the Americal Academoy of Child and Adolescent Psychiatry* **54**, 412–425.

Luft J, Ingham H (1955). The Johari Window: A Graphic Model of Interpersonal Awareness. *Proceedings of the Western Training Laboratory in Group Development*. UCLA: Los Angeles.

MacDonald C, Breithaupt K, Stodel E, Farres L, Gabriel M (2002). Evaluation of web-based educational programmes via the demand driven learning model: a measure of web-based learning. *International Journal of Testing* **2**, 35–61.

MacFadyen A, Webster V, Strachan K, Figgens E, Brown H, McKechnie J (2005). The readiness for inter professional learning scale: a possible more stable sub scale model for the original version of the RIPLS. *Journal of Interprofessional Care* **24**, 194–197.

Mancini M, Miner C (2013). Learning and change in a community mental health setting. *Journal of Evidence-Based Social Work* **10**, 494–504.

Mann K, Sargent J, Hill T (2009). Knowledge translation in interprofessional education: what difference does interprofessional education make to practice? *Learning in Health and Social Care* **8**, 154–164.

Morey J, Simon R, Gregory D, Wears R (2002). Error reduction and performance improvement in the emergency department through formal teamwork training: evaluation of the MedTeams project. *Health Services Research* **37**, 1553–1581.

Morisson J (2003). Evaluation: ABC of learning and education. *BMJ* **326**, 385.

Parsell G, Bligh J (1999). The development of a questionnaire to assess the readiness of health care students for inter professional learning (RIPLS). *Medical Education* **33**, 95–100.

Petrie A, Sabin C (2009). *Medical Statistics at a Glance*. Wiley-Blackwell: London.

Pettersen G, Rosenvinge J, Thun- Larsen K, Wynn R (2012). Clinical confidence following an inter professional educational program on eating disorders for health care professionals: a qualitative analysis. *Journal of Multidisciplinary Healthcare* **5**, 201–205.

Priest HM, Roberts P, Dent H, Blincoe C, Lawton D, Armstrong C (2008). Interprofessional education and working in mental health: in search of the evidence base. *Journal of Nursing Management* **16**, 474–485.

Reeves S, Zwarenstein M, Goldman J, Barr H, Freeth D, Hammick M, Koppel I (2009). Interprofessional education: effects on professional practice and health care outcomes. The Cochrane Library.

Royal College of Psychiatrists (2012). *Junior MARSIPAN: Management of Really Sick Patients with Anorexia Nervosa (CR168).* Royal College of Psychiatrists.

Royal College of Psychiatrists (2014). *MARSIPAN: Management of Really Sick Patients with Anorexia Nervosa (CR189),* 2nd edn. Royal College of Psychiatrists.

Steinhausen H (2009). Outcome of eating disorders. *Child and Adolescent Psychiatry Clinics of North America* **18**, 225–242.

Stephen F, Melville A, Krause T (2012). A study of medical negligence claims in Scotland. Scottish Government Social Research (www.scotland.gov.uk/socialresearch). Accessed 3 March 2014.

Tajfel H (1981). *Human Groups and Social Categories*. Cambridge University Press: Cambridge.

Thistlethwaite JE, Davies D, Ekceoka S, Kidd JM, MacDougall C, Matthews P, Purkis J, Clay D (2012). The effectiveness of case based learning in health professional education: a BEME systematic review. *Medical Teacher* **34**, E421–E444.

Thompson-Brenner H, Satir D, Franko D, Herzog D (2012). Clinician reactions to patients with eating disorders: a review of the literature. *Psychiatric Services* **63**, 73–78.

Tuckmann B (1965). Developmental sequence in small groups. *Psychological Bulletin* **63**, 384–399.

Tunstall- Pedoe S, Rink E, Hilton S (2003). Student attitudes to undergraduate interprofessional education. *Journal of Interprofessional Care* **17**, 161–172.

Vostanis P, O'Reilly M, Taylor H, Day C, Street C, Wolpert M, Edwards R (2012). What can education teach child mental health services? Practitioners' perceptions of training and joint working. *Emotional and Behavioural Difficulties* **17**, 109–124.

Wall D (2007). *Evaluation: Improving Practice, Influencing Policy*. Association for the Study of Medical Education, pp. 6–7.

Waller G, Stanger H, Meyer C (2012). What cognitive behavioural techniques do therapists report using when delivering cognitive behavior therapy for eating disorders. *Journal of Consulting and Clinical Psychology* **80**, 171–175.

World Health Organisation (WHO) (2010). *Framework for Action on Interprofessional Education and Collaborative Practice*. WHO: Geneva.

Young A, Chinman M, Forquer S, Knight E, Vogel H, Miller A, Rowe M, Mintz J (2005). Use of a consumer-led intervention to improve provider competencies. *Psychiatric Services* **56**, 967–975.

Zwarenstein M, Reeves S (2006). Knowledge translation and interprofessional collaboration: where the rubber of evidence-based care hits the road of teamwork. *Journal of Continuing Education in the Health Professions* **26**, 46–54.

https://doi.org/10.1017/ipm.2015.61 Published online by Cambridge University Press