Macneil Craig (Orcid ID: 0000-0002-7075-1593)
Cotton Sue (Orcid ID: 0000-0002-9386-8348)

TRAINING OF EARLY PSYCHOSIS CLINICIANS 1
Corresponding Author:

Craig A Macneil

Senior Clinical Psychologist

EPPIC Statewide Services

Orygen Youth Health

Locked Bag 10 (35 Poplar Road)

Parkville Victoria Australia 3052

Tel: +613 9342 2800

Fax: + 613 9387 3003

Email: craig.macneil@mh.org.au

Early Intervention in the Real World

**The effectiveness of a professional development training program in increasing
knowledge of mental health clinicians specialising in early psychosis.**

Craig Macneil^{1,2}, Frances Foster¹, Amanda Nicoll¹, Richard Monfries¹, Lucas Coulson^{1,2},
Helen Osman¹, Michelle Grainger^{1,5}, Sue Cotton^{3,4}

Affiliations:

This is the author manuscript accepted for publication and has undergone full peer review but has not been through the copyediting, typesetting, pagination and proofreading process, which may lead to differences between this version and the [Version of Record](#). Please cite this article as doi: [10.1111/eip.12785](https://doi.org/10.1111/eip.12785)

¹ EPPIC Statewide Services, Orygen Youth Health, Parkville, Victoria 3052, Australia

² Early Psychosis Prevention & Intervention Centre (EPPIC), Orygen Youth Health, Victoria 3052, Australia

³ Orygen, The National Centre of Excellence in Youth Mental Health, Parkville, Victoria 3052, Australia

⁴ Centre for Youth Mental Health, The University of Melbourne, Victoria 3052, Australia

⁵ Department of Medical Education, The University of Melbourne, Victoria 3010, Australia

Abstract**Aims:**

For early psychosis services to be effective, it is essential to have staff that are trained in evidence-based interventions in this area. In this paper, we report on research undertaken by The Early Psychosis Prevention and Intervention Centre's (EPPIC) Statewide Services (ESW) team. The focus was on assessing knowledge acquisition in early psychosis clinicians that had attended ESW's specialist training.

Methods:

Between October 2012 and October 2017, data was collected from a large cohort of clinicians that had attended 46 ESW workshops covering topics identified in international guidelines as key components of early psychosis service provision. Participants were asked to complete between three and eleven pre- and post-workshop short answer and/ or multiple-choice questions that related to learning outcomes for the workshop. The percentage of correct responses before and after the workshop were compared for each participant, with a cumulative measure taken to provide information regarding knowledge acquisition across each workshop.

Results:

Participant compliance was high (89.7%) with 962 completed questionnaires being collected from 1073 attendees across the workshops. Results showed that the ESW training led to a statistically significant increase in clinician knowledge from pre-training scores of 47.2% correct, to 83.5% correct answers at the conclusion of training (pre $M=47.2\%$, $SD=28.8$; post $M=83.5\%$, $SD=23.7$; $t(890)=-35.66$, $p<.001$).

Conclusions:

Training that utilised adult learning principles, had a strong focus on evidence-based interventions, and used clinical examples to embed core principles, led to a statistically significant increase in early intervention clinician knowledge.

Introduction

Staff training has been identified as a core component of early psychosis service provision (Hughes et al. 2014), in addition to being a key aspect of bridging the gap between evidence-based research and competent clinical practice (Furber et al., 2015). In the past 20 years, the international growth of early psychosis services has led to an increased need for clinicians that are informed and skilled in this specialist area (De Maio, Graham, Vaughan, Haber, & Madonick, 2015; McGorry, 2015; Osman et al., 2017).

Guidelines have been developed identifying key aspects of care that should be provided by early psychosis services, with a clear need for clinicians to be informed of, and competent in, areas including; engagement and assessment, utilisation of case formulation, working with families, and a treatment approach that includes psychological, biological and social interventions (International Early Psychosis Association Writing Group, 2005; Ministry of Health and Long-Term Care, 2011; Orygen Youth Health Research Centre, 2010a, 2010b, 2016; Osman et al., 2017).

While there is a small literature evaluating staff training for psychosis clinicians (Riggs et al., 2016; Waller et al., 2015; Macneil et al., 2017), the focus of this research has been mainly on its acceptability, rather than on training effectiveness in terms of knowledge transfer. Thus, the purpose of this paper is to determine the effectiveness of multiple workshops delivered by the Early Psychosis Prevention & Intervention Centre (EPPIC) Statewide Services Team (ESW) in terms of knowledge acquisition. It complements our previous research examining overall feedback on training undertaken by ESW (Macneil, Foster, Nicoll, Osman, Monfries & Cotton, 2017); however, here we evaluate the effectiveness of the training as measured by participants' ability to correctly answer key questions relating to specialised Early Intervention in Psychosis (EIP) content. We describe an overview of the development and presentation of the ESW workshops, the pre and post knowledge scores reported by clinicians that attended the workshops, and provide recommendations for future training of EIP clinicians.

Methods

Setting:

ESW is part of the EPPIC Clinical Program of Orygen Youth Health in Melbourne, Australia. ESW is funded by the Victorian State Government to provide free training and secondary consultation to EIP clinicians working in public mental health in the state. This is undertaken

partly through a programme of workshops advertised through an annual training calendar, and also by providing specialised, tailored training to Youth Early Psychosis Services (YEPS) and services providing interventions for early psychosis in both metropolitan and regional Victoria.

This project was funded within the ESW training budget, did not require external funding, and did not require external ethical approval due to being a quality improvement exercise utilising de-identified data.

Participants:

The majority of participants were early psychosis clinicians, working in the public sector who attended ESW training events between October 2012 and October 2017. There was no financial incentive to attend the training, but attendance counted toward participants' completing the professional development hours required to maintain their registration. Participant demographics are described later.

Workshops:

National and international early psychosis clinical practice guidelines (International Early Psychosis Writing Group, 2005; Ministry of Health and Long Term Care, 2011; Orygen Youth Health, Research Centre 2015), formed the basis for much of the training content, with

workshops comprising evidence-based research that reflected the developing literature. The synthesis between learning objectives and related practice guidelines in ESW workshops is described in a previous paper (Macneil, Foster, Nicoll, Osman, Monfries & Cotton, 2017).

Workshops included: Therapeutic Engagement, Case Formulation, Working with Families in Early Psychosis, Psychological Interventions in Early Psychosis, Comorbid Substance Use in Early Psychosis, Recognition of and Interventions for At Risk Mental State, Vocational and Functional Recovery in Early Psychosis, Incomplete Recovery in First Episode Psychosis (FEP), Pharmacotherapy and Biology in FEP, and Psychological and Biological Interventions for First Episode Bipolar Disorder. Workshop duration ranged from half a day, to being facilitated over two days (Macneil, Foster, Nicoll, Osman, Monfries & Cotton, 2017). An overview of workshop duration and learning objectives is provided in Table 1.

(Insert Table 1 about here)

All workshops were developed and facilitated by ESW, a multidisciplinary team comprising four part-time trainers (2.0 full time equivalent) with backgrounds in Occupational Therapy, Nursing, and Clinical Psychology. The trainers were all senior mental health clinicians with a minimum of 10 years of clinical experience in mental health, and at least 3 years specialising in FEP. In addition, all trainers either had qualifications in staff education (i.e., Certificate IV

in Training and Assessment, a nationally recognised vocational and education qualification), or were supervised by trainers that had obtained this qualification.

Workshops had a strong focus on adult learning principles, which emphasises that training should be directed towards finding practical solutions to real world problems (Knowles, Holton, & Swanson, 2005; Roberts, Gustavs, & Mack, 2012; Russel, 2006), should account for different learning styles, and that participants should be approached as being self-directed, and having had valuable life experience (Sanchez & Cooknell, 2017; Knowles, Holton, & Swanson, 2005).

In addition, the ESW workshops were guided by a four-phase training model (Macneil, Foster, Nicoll, Osman, Monfries & Cotton, 2017) which draws largely from instructional design theory. Instructional design provides a framework intended to optimise learning outcomes (Obizoba, 2015) and while encompassing a number of models (Gustafson & Branch, 1997) key elements include analysis, design, development, implementation and evaluation (Sink, 2014). Our model of training comprises:

1. *Planning* - liaising with stakeholders, training needs analysis, and clarifying key content topics.

2. *Design and development* - undertaking literature updates, identifying relevant clinical examples and exercises, and, when possible, incorporating feedback from previous workshops.
3. *Delivery* - comprising facilitation of the material using a multimodal training format that incorporates aspects of visual, auditory and kinaesthetic learning, awareness of participant attention and comprehension levels, and a focus on environmental factors such as room size, layout and temperature.
4. *Evaluation* - through use of participant forms incorporating qualitative and quantitative feedback, and reflection by trainers on participant involvement, areas that appeared to have worked well, and those that could benefit from modification.

Evaluation:

Quality assurance in training is assisted by evaluation. Kirkpatrick and colleagues' model of evaluation is widely used, and was adopted for our evaluation (Alliger & Janak, 1989; Kirkpatrick & Kirkpatrick, 1993; Kirkpatrick & Kirkpatrick, 2005). Kirkpatrick's model suggests that training evaluation comprises four main elements, those of: (i) *reaction* - participants' initial responses to the training; (ii) *learning* - knowledge acquired through the training; (iii) *behaviour* - practise change in response to training; and (iv) *results* - organisational change in response to the training. Here we focus on level 2 of Kirkpatrick's model, namely, evaluating clinicians' learning and knowledge acquisition.

A workshop feedback form was developed (see Macneil, Foster, Nicoll, Osman, Monfries & Cotton, 2017) that comprised seven key sections. It includes both quantitative and qualitative measures, specifying that participants identify their response on a five-point Likert scale, in addition to open comments sections. However, of particular relevance to this paper, ESW facilitators wanted to assess participants' knowledge of key learning objectives. Therefore, the evaluation forms included between 3 and 11 ($M=6.6$, $SD=2.2$) multiple choice or short answer questions specifically related to the training content for each workshop and key learning objectives set by the trainer, which participants were asked to complete before the training, and again at its completion. Multiple choice questions related to issues such as the reported prevalence of voice-hearing experiences in the general public, and percentage of disengagement from early intervention services, with short answer questions including identifying evidence-based interventions for hearing distressing voices, and key components of case formulation (see Table 2 for workshop sample questions). Short answer responses were scored according to an answer template compiled by the workshop trainers. While we recognise that there was a lack of uniformity in evaluation forms across topics, this was necessary due to workshops covering varying content, and trainers identifying specific learning outcomes for each workshop. Questions were designed in a way to avoid being leading or to have characteristics (e.g., double negatives) that could introduce bias in responding.

Trainers encouraged completion of the evaluation forms by stating that feedback was considered highly valuable.

(Insert Table 2 about here)

Analysis:

Clinician characteristics were described using means (and standard deviations) for continuous variables and percentages (and counts) for categorical variables. For each group, the percentage of questions correctly answered at baseline and at the end of the workshop were calculated. Calculation of percentages allowed for some uniformity in comparison across groups, especially as the number of items could vary across workshops. To test overall change in knowledge between pre- and post-workshop knowledge, a paired samples *t*-test was calculated based on these percentage scores. A series of two-way mixed analysis of variance models were used to test differences in change scores by sex, age, profession, years of working experience in general mental health and early psychosis, and time spent undertaking clinical work. These variables would be the between-participants' independent variables (e.g. sex), and time (pre- and post- workshop) would be the within-participants' variable. The main effects for these variables, the main effect for time, and the interaction between these variables and time could be tested. Partial eta (partial η^2) was reported as a measure of effect size and interpreted using guidelines provided by Cohen (1988). Because these were exploratory analyses, and to reduce the rate of type II error, there were no adjustments for multiple comparisons (Rothman, 1990).

Results

ESW collected data from 46 training workshops between October 2012 and October 2017.

962 evaluation forms were collected from a total 1073 attendees indicating a compliance rate of 89.7%. There was a mean number of 23.8 participants per workshop ($SD=7.4$).

Workshop participants

Most participants were female (79.3%, $n=722$; missing sex details for $n=50$), and ranged in age from 20 to 66 years ($M_{age}=35.7$, $SD=10.1$; age was provided by $n=758$).

The professional background of these clinicians is described in Table 3. Most clinicians were from either a clinical psychology or nursing background. Miscellaneous professions included ‘counsellor’, ‘early psychosis clinician’, ‘youth worker’, ‘music therapist’, ‘life coach’, and ‘mental health practitioner’. Years working in mental health and in early psychosis varied greatly from 0 to 41 years. Most clinicians spent 75-100% of their work time in direct client contact rather than management or administrative roles.

(Insert Table 3 about here)

Knowledge change.

891 clinicians answered the knowledge questions for the training, with there being a significant change in percentage correct answers to the knowledge questions from pre to post workshops (*pre* $M=47.2\%$, $SD=28.8$; *post* $M=83.5\%$, $SD=23.7$; $t(890)=-35.66$, $p<.001$).

Table 4 comprises the mean percentage correct responses pre and post workshops in terms of sex, age, professional background, years of experience, and time spent in the clinic.

Supporting the *t*-test findings, in all two-way ANOVAs, the main effects for time (pre and post) were significant (all $p<.001$). For the model containing sex as an independent variable, the interaction term was not significant; however, there was a significant main effect for sex. ($F(1, 847)=6.44$, $p=.001$, $\eta^2=.01$). Female clinicians overall demonstrated better knowledge than males. Age of clinician had no impact on the change in correct responses.

(Insert Table 4 about here)

There was no interaction in the model containing professional background. There was a significant main effect for background ($F(5, 769)=3.66$, $p=.003$, $\eta^2=.023$). Post hoc analyses indicated that those clinicians from a social work background had significantly less knowledge than those clinicians from an occupational therapy ($p=.019$) or psychology ($p<.001$) background, regardless of time.

For the model containing the independent variable years working in mental health (based on three categories, <5years, 5-10 years, 10+years) there was a significant interaction ($F(1,$

801)=7.69, $p<.001$, $\eta^2=.02$). Post hoc analysis indicated that prior to the workshop, those with less than 5 years of experience had significantly lower correct responses than those clinicians with 5-10 years' experience ($p=.016$) prior to the workshop; however, such differences were not observed post workshop.

There was also a significant interaction for the model containing years working in early psychosis (based on three categories, <5years, 5-10 years, 10+years) ($F(2, 711)=3.96$, $p=.02$, partial $\eta^2=.01$). Post hoc analyses indicated that those with <5 years' experience in early psychosis had a greater percentage correct post the workshop compared to those who had 5-10 years' experience ($p=.028$).

The time in the clinic had no significant impact on percentage of questions correct as both the interaction and the main effect for time spent in clinic were not significant.

Discussion

At Orygen Youth Health, based on years of experience in early psychosis, we are in the unique position to have the ESW service that is equipped with trained educators that can provide support to clinicians across the state of Victoria. This novel evaluation research indicated that ESW training led to statistically significant increases in participant knowledge of key concepts in early psychosis service provision.

Learning and gender: Interestingly, females were more likely to correctly answer knowledge questions in both pre- and post-test scores. While there is an contradictory literature in this area (Al Saud, 2013; Campos et al., 2018) this is consistent with some research on gender learning in health which suggests that females demonstrate higher planning, task management and persistence, and that these may be mediating factors in terms of outcome (Edgar, 2015). However, there remains some consensus that the effect of gender on learning is poorly understood (Campos et al., 2018).

Background discipline:

Individuals from Social Work backgrounds were found to perform less well than those from other professions before and after testing. An explanation for this outcome is that the ESW Team did not have a Social Worker as part of our training team, potentially resulting in a bias in questionnaire design towards issues not as relevant in social work training. Again, the literature is sparse regarding discipline differences in learning in health and further work in this area in mental health is required.

Experience:

It is notable that even experienced mental health professionals who had worked in general mental health or early psychosis for 5-10 years obtained only 50.0% and 50.7% correct answers respectively prior to the training. While this figure may not appear particularly high,

it may indicate that these individuals chose to attend training in which they felt their knowledge was more limited and would fill a professional gap.

The finding that individuals with less than 5 years specialised early intervention experience performed better at post than those with more than 5 years is an interesting one. While a number of factors may explain this, potential mediators could be that motivation was potentially higher in younger students (Campos et al., 2018; Tjin A Tsoi et al., 2018), and that younger age participants (i.e. aged 20-29) have been found to demonstrate significantly higher scores in learning gains (Lim et al., 2006)

We propose that the positive outcomes regarding knowledge acquisition resulting from the ESW training is due to a number of factors. A number of these have been identified as likely to improve outcomes in health education (Gooding et al., 2017). First, the workshops were facilitated by trainers with direct clinical experience in FEP and content expertise in the area that they were facilitating. We believe that this gave the facilitators strong face validity and an ability to embed learning through clinical examples.

Second, training involved meticulous planning and project management, with strong liaison with stakeholders to ensure that the training was relevant to clinical staff, and that ESW trainers were aware of any organisational issues that could impact on participants' learning. For example, if trainers were aware of significant organisational change, redundancies, changes in job description, or reductions in funding, time would be allowed to acknowledge these issues with staff before commencing the training. This would potentially allow participants to focus more on workshop content.

Third, trainers spent considerable time developing workshops, updating them according to emerging evidence, and utilised engaging presentations both in terms of content and audio-visual presentation (e.g., the use of a 'Presentation Zen' (Reynolds, 2011) style focussing on clear, simple, minimalist slides).

Finally, the trainers recapped on important material, provided illustrative clinical examples throughout the training, and allocated time to discuss overcoming potential individual or systemic challenges to implementing new skills. This approach was considered critical in terms of embedding knowledge, with recognition of the dangers of providing training, which, although enjoyable, does not result in knowledge increase or practice change.

Strengths and limitations

There are a number of strengths with this evaluation research. First, we are unaware of any study this size that measures knowledge acquisition in EIP clinicians. We believe that this is important, given that the efficacy of, and funding for, early psychosis services relies on having a workforce that is competent, knowledgeable, and informed about evidence-based interventions (Bertolote & McGorry, 2005; French, Smith, Shiers, Reed, & Rayne, 2010; Hoge, 2002; Nash et al., 2004). The outcome of this research demonstrates that specialised training can result in statistically significant knowledge acquisition in this cohort, regardless of age, gender, professional background or years of experience.

A second strength of this research is that questionnaire completion rates were high, resulting in outcomes that we believe are representative of the cohort of early psychosis that attended ESW training.

A third strength of this research is that it included participants from most, if not all, professions involved in providing early psychosis services. Furthermore, participants covered a wide age spectrum (ages 20-66), and included a range from junior clinicians and students that reported having no specialist experience in FEP, to individuals who described having up to 30 years prior training and experience in this area ($M=2.8$ years, $SD=3.9$). We therefore believe that these results are potentially widely replicable across other early psychosis

services, and that this training approach could lead to similar positive outcomes in a range of FEP services worldwide.

The main limitation of this research is its primary focus on Kirkpatrick's level 2 training evaluation, that of participant learning. While staff from ESW have written a previous paper focussing on a level 1 evaluation, that of participant reaction (Macneil, Foster, Nicoll, Osman, Monfries & Cotton, 2017), we recognise that the research would have been strengthened by inclusion of level 3 and 4 evaluation measures, that of participants' behavioural change in response to training, and the organisational impact of the training. As noted previously (Macneil, Foster, Nicoll, Osman, Monfries & Cotton, 2017) however, measuring these outcomes can be challenging in terms of resources, particularly within public mental health services, and could potentially impact on confidentiality and the engagement of early psychosis service users.

Conclusions

The continued success of early psychosis services depends on maintaining a workforce that is knowledgeable and skilled in providing interventions that are evidence-based. Ongoing specialist training, provided by experienced trainers with strong content knowledge, that involves careful planning, and an emphasis on adult learning principles and instructional design, should allow staff to remain informed of clinical developments and evidence-based

guidelines. This would appear to remain the most effective way of ensuring that young people and families experiencing FEP have the best possible treatment, and therefore the highest potential for achieving optimal symptomatic and functional outcomes.

Acknowledgements

The authors would like to thank Sandra Biggs, Amy Mackay and Paul Smedley, who assisted significantly in data collection for this research, and all the clinicians that attended ESW training and provided the feedback from which we drew this data.

The authors would also like to thank the reviewers for helpful comments made on an earlier draft.

References

- Al-Saud, L. M. S. (2013). Learning style preferences of first-year dental students at King Saud University in Riyadh, Saudi Arabia: influence of gender and GPA. *Journal of Dental Education*, 77(10), 1371–1378
- Alliger, G.M., & Janak, E.A. (1989). Kirkpatrick's levels of training criteria: thirty years later. *Personnel Psychology*, 42, 331-42.

Bertolote, J., & McGorry, P. D. (2005). Early intervention and recovery for young people with early psychosis: Consensus statement. *British Journal of Psychiatry*, 187(Suppl. 48), s116–s119.

Campos F, Sola M, Santisteban-Espejo A, et al. (2018). Conceptions of learning factors in postgraduate health sciences master students: a comparative study with non-health science students and between genders. *BMC Medical Education*. 18(1):128

Cohen J. (1988) *Statistical power analysis for the behavioral sciences*, Hillsdale, NJ: Lawrence Erlbaum Associates, Incorporated.

De Maio, M., Graham, P., Vaughan, D., Haber, L., & Madonick, S. (2015). Review of international early psychosis programmes and a model to overcome unique challenges to the treatment of early psychosis in the United States. *Early Intervention in Psychiatry* 9(1), 1-11.

Edgar, S. (2015). Identifying the influence of gender on motivation and engagement levels in student physiotherapists. *Medical Teacher*, 37(4), 348–353

French, P., Smith, J., Shiers, D., Reed, M., & Rayne, M. (2010). Promoting recovery in early psychosis. West Sussex, England: Wiley-Blackwell.

Furber, G., Segal, L., Leach, M., Turnbull, C., Procter, N., Diamond, M., Miller, S., & McGorry, P. (2015) Preventing mental illness: closing the evidence-practice gap through workforce and services planning *BMC Health Services Research*, 15, 283.

Gooding, H.C., Mann, K., Armstrong, E. (2017). Twelve tips for applying the science of learning to health professions education. *Medical Teacher*, 39(1):26-31

Gustafson, K.L., and R.M. Branch. (1997). *Survey of Instructional Development Models*, 3rd edition. Syracuse, NY: ERIC Clearinghouse on Information and Technology.

Hoge, M. A. (2002). The training gap: An acute crisis in behavioural health education. *Administration and Policy in Mental Health*, 33(4/5), 303–317.

Hughes, F., Stavely, H., Simpson, R., Goldstone, S., Pennell, K., & McGorry, P. (2014). At the heart of an early psychosis centre: The core components of the 2014 Early Psychosis Prevention and Intervention Centre model for Australian communities. *Australasian Psychiatry*, 22(3) 228– 234.

International Early Psychosis Association Writing Group. International Clinical Practice Guidelines for Early Psychosis (2005). *British Journal of Psychiatry* 187 (Suppl. 48), S120-S124.

Kirkpatrick, D., & Kirkpatrick, J.D. (1993). *Evaluating training programs: the four levels* (1st ed.). San Francisco, CA: Berrett – Koehler Publishers.

Kirkpatrick, D., & Kirkpatrick, J. (2005). *Transferring learning to behavior – Using the four levels to improve performance*, (1st ed.), San Francisco, CA: Berrett – Koehler Publishers.

Knowles, M.S., Holton, E.F., & Swanson, R.A. (2005). *The adult learner: the definitive classic in adult education and human resource development*. Burlington, MA: Elsevier.

Lim DH, Morris ML, Yoon S-W (2006). Combined effect of instructional and learner variables on course outcomes within an online learning environment. *Journal of Interactive Online Learning* 5 (3), 255-269.

Macneil, C., Foster, F., Nicoll, A., Osman, H., Monfries, R., & Cotton, S. (2017). Evaluation of a professional development training programme for mental health clinicians specializing in early psychosis. *Early Intervention in Psychiatry*

Malla, A., Iyer, S., McGorry, P., Cannon, M., Coughlan, H., Singh, S., Jones, P., & Joobor, R. (2016). From early intervention in psychosis to youth mental health reform: a review of

the evolution and transformation of mental health services for young people. *Soc Psychiatry Psychiatr Epidemiol.*, 51, 319–326.

McGorry, P.D. (2015). Early Intervention in Psychosis; Obvious, Effective, Overdue. *Journal of Nervous and Mental Disease*, 5, 310-318.

Ministry of Health and Long-Term Care (2011). *Early Psychosis Intervention Program Standards*, Ontario.

Nash, L., Gorrell, J., Cornish, A., Rosen, A., Miller, V., & Tennant, C. (2004). Clinical outcome of an early psychosis intervention program: Evaluation in a real-world context. *The Australian and New Zealand Journal of Psychiatry*, 38(9), 694–701.

Obizoba, C (2015). Instructional design models—framework for innovative teaching and learning methodologies. *The Business and Management Review*, 6(5), 21-31.

Orygen Youth Health Research Centre (2016). *Australian Clinical Guidelines for Early Psychosis: Second Edition Update*. Melbourne.

Orygen Youth Health Research Centre (2010). *Cognitive-Behavioural Case Management in Early Psychosis: A Handbook*. Melbourne.

Orygen Youth Health Research Centre 2014). *Get on Board: Engaging Young People and their Families in Early Psychosis*. Melbourne.

Osman H, Jorm AF, Killackey E, Francey S, Mulcahy D (2017). Early psychosis workforce development: Core competencies for mental health professionals working in the early psychosis field. *Early Intervention in Psychiatry*
<http://onlinelibrary.wiley.com/doi/10.1111/eip.12465/abstract>

Raballo, A., Poletti, M., & McGorry, P. (2017). Architecture of change: rethinking child and adolescent mental health. *The Lancet. Psychiatry* 4(9), 656-658.

Reynolds, G. (2011). *Presentation Zen: Simple Ideas on Presentation Design and Delivery* (2nd ed.). California: New Riders.

Riggs, S., Garrett, M., Arnold, K., Colon, E., Feldman, E.N., Huangthaisong, P., Hyacinthe, B., Indelicato, H-A., & Lee, E. (2016). Can frontline clinicians in public psychiatry settings provide effective psychotherapy for psychosis? *American Journal of Psychotherapy*. 70(3), 301-328.

Roberts, T.V., Gustavs J., & Mack, H.G. (2012). Becoming an expert: a review of adult learning theory and implications for vocational training in ophthalmology. *Clinical & Experimental Ophthalmology*, 40, 519-526.

Rothman KJ. (1990) No adjustments are needed for multiple comparisons. *Epidemiology* 1: 43-46.

Russell, S.S. (2006). An Overview of Adult Learning Processes. *Urol Nurs*. 26(5):349-352, 370.

Sanchez, L.M. & Cooknell, L.E. (2017). The Power of 3: Using adult learning principles to facilitate patient education. *Nursing*, 47(2), 17–19.

Sink, D.L. in Biech, E. (2014). *ASTD Handbook: The definitive reference for training & development* (2nd Edition). American Society for Training & Development. Alexandria VA

Tjin A Tsoi, Sharon L. N. M., de Boer, Anthonius, Croiset, Gerda, Koster, Andries S., van der Burgt, Stéphanie, Kusurkar, Rashmi A. (2018). How basic psychological needs and

motivation affect vitality and lifelong learning adaptability of pharmacists: a structural equation model *Advances in Health Sciences Education* 23, (3) 549-566

Waller, H., Garety, P., Craig, T., Jolley, S., Fornells-Ambrojo, M., Kuipers, E., Onwumere, J., Woodall, A., & Craig, T. (2015). Training frontline mental health staff to deliver "low intensity" psychological therapy for psychosis: a qualitative analysis of therapist and service user views on the therapy and its future implementation. *Behavioural And Cognitive Psychotherapy*, 43(3), 298-313.

Workshop Title	Duration (hours)	Objectives
Therapeutic Engagement	7	<p>For participants to;</p> <ul style="list-style-type: none"> understand the importance of & rationale for engagement in acute phase of First Episode Psychosis (FEP). be aware of challenges to engagement during the acute phase of FEP. understand & implement techniques that promote & maintain engagement. understand the process of therapeutic relationship ruptures & how to manage these. recognise the importance of therapeutic boundaries & how to use considered therapeutic disclosure.
Case Formulation	4	<p>For participants to;</p> <ul style="list-style-type: none"> understand the rationale behind case formulation. demonstrate knowledge of the 'Five Ps' model (i.e. predisposing, precipitating, presenting, perpetuating & protective factors). understand the schema model of formulation. practice different models of formulation using case examples.
Working with Families in Early Psychosis	7	<p>For participants to;</p> <ul style="list-style-type: none"> understand the importance of family involvement in FEP. understand challenges facing families experiencing FEP. recognise the interactions between symptoms & the family system. understand the importance of non-pathologising of family systems.
Psychological Interventions in Early Psychosis	14	<p>For participants to;</p> <ul style="list-style-type: none"> understand the rationale & evidence base around cognitive Behavioural Therapy for psychosis. demonstrate awareness of factors impacting on engagement. undertake a psychological formulation. demonstrate techniques in working compassionately with delusions. understand techniques for working effectively with distressing voices. be aware of issues surrounding adaptation & psychoeducation in FEP. Understand key concepts of wellness planning.
Comorbid Substance Use in Early Psychosis	7	<p>For participants to;</p> <ul style="list-style-type: none"> understand the prevalence of substance use in FEP have awareness of the bidirectional nature of substance use & psychosis. understand characteristics & impact of specific substances including cannabis, solvents, alcohol,

		<p>amphetamines, hallucinogens & opiates.</p> <ul style="list-style-type: none"> describe interventions to assist reduction of substance use in FEP.
Recognition of and Interventions for At Risk Mental State	7	<p>For participants to;</p> <ul style="list-style-type: none"> understand the importance of identifying those at Ultra High Risk (UHR) of developing psychosis. be able to identify key features of At Risk Mental State & UHR. assess case studies demonstrating potential UHR. understand evidence-based interventions for UHR.
Vocational and Functional Recovery in Early Psychosis	7	<p>For participants to;</p> <ul style="list-style-type: none"> be able to recognise the importance of recovery beyond symptomatic improvement. understand challenges to returning to work/ study after FEP. consider the role of goalsetting interventions in supporting recovery. consider the range of elements of functional recovery – including social, vocational, educational and cognitive recovery – encompassing what might be involved in improving or hindering recovery.
Incomplete Recovery in First Episode Psychosis	7	<p>For participants to;</p> <ul style="list-style-type: none"> be able to identify different components of recovery. be able to identify/ formulate reasons for incomplete recovery. understand interventions to facilitate symptomatic & functional recovery. utilise service models to assist with incomplete recovery.
Pharmacotherapy and Biology in FEP	7	<p>For participants to;</p> <ul style="list-style-type: none"> have an understanding of the biology of FEP. be aware of medications used in psychotic disorders. have an understanding of pharmacokinetics & pharmacodynamics in FEP. be aware of the evidence base for pharmacological interventions for FEP. have awareness of novel treatments in FEP
Psychological & Biological Interventions for First Episode Bipolar Disorder	14	<p>For participants to;</p> <ul style="list-style-type: none"> have an overview of first episode bipolar disorder. understand biological factors in the aetiology/ maintenance of bipolar disorder. understand psychological factors in the aetiology/ maintenance of bipolar disorder. be aware of the challenges/ opportunities for treatment of first episode bipolar disorder. have knowledge of biological interventions for first episode bipolar disorder. have knowledge of cognitive & behavioural interventions for mania & depression. understand interventions for wellness planning.

Table 2: Workshop sample questions

Workshop Title	Questions
Therapeutic Engagement in First Episode Psychosis	<p><u>Question 1</u> According to Stewart (2012), up to what percentage of people experiencing first episode psychosis (F.E.P.) drop out within the first year?</p> <ol style="list-style-type: none"> 20% 30% 50% 80% <p><u>Question 2</u> Name 3 challenges to engaging people in the acute phase of F.E.P.</p> <ol style="list-style-type: none"> <p><u>Question 3</u> Name 3 techniques to enhance engagement in F.E.P.</p> <ol style="list-style-type: none">
Cognitive Behavioural Therapy for Psychosis	<p><u>Question 1</u> According to the Cochrane Review (2008), for people with a diagnosis of schizophrenia, psychoeducation;</p> <ol style="list-style-type: none"> Improves medication adherence, and social functioning Improves insight and lowers drop-out Improves social functioning and insight None of the above All of the above <p><u>Question 2</u> What are the 'five p's' of formulation?</p> <ol style="list-style-type: none"> <p><u>Question 3</u> What percentage of people reports having experienced voices at some point in their lives?</p> <ol style="list-style-type: none"> 2% 4% 7% 13% <p><u>Question 3</u> Name 3 CBT interventions for voices</p> <ol style="list-style-type: none">

First Episode Psychosis: Principles & Philosophy	<p><u>Question 1</u></p> <p>How many types of schizophrenia spectrum psychotic disorders are described in the DSM5?</p> <ol style="list-style-type: none"> 1) 3 2) 5 3) 11 4) 13 <p><u>Question 2</u></p> <p>List the 3 Ultra High Risk (UHR) groups as detailed in the Comprehensive Assessment of At Risk Mental States (CAARMS):</p> <ol style="list-style-type: none"> 1. 2. 3. <p>What percentage of people that have experienced psychosis will relapse within the first year?</p> <ol style="list-style-type: none"> 1. 0-9% 2. 10-19% 3. 20-35% 4. 36-50%
--	--

Table 3

The background of clinicians participating in the 46 ESW workshops

Professional background ^a		
Psychology	% (n)	30.0 (264)
Nurse	% (n)	26.3 (232)
Occupational therapist	% (n)	13.1 (115)
Social work	% (n)	18.3 (161)
Psychiatry/Medical	% (n)	2.8 (25)
Student	% (n)	3.4 (33)
Other	% (n)	3.4 (33)
Years working in mental health ^b	M (SD)	8.2 (7.8)
Years working in early psychosis ^c	M (SD)	2.8 (3.9)
Time undertaking clinical work ^d		
0-25%	% (n)	11.2 (92)
25-50%	% (n)	4.5 (37)
50-75%	% (n)	15.8 (130)
75-100%	% (n)	68.5 (562)

^a Valid cases n=881

^b Valid cases n=867

^c Valid cases n= 767

^d Valid cases n=821

Table 4

Pre and post workshop percentage correct scores for knowledge questions for clinicians

Variables of interest		Percentage correct	
		Pre	Post
Sex			
Female (<i>n</i> =670)	M (SD)	48.1 (28.8)	85.2 (22.6)
Male (<i>n</i> =179)	M (SD)	45.8 (28.6)	78.4 (26.1)
Age			
≤30 years (<i>n</i> =326)	M (SD)	46.2 (29.0)	82.3 (23.1)
31-40 years (<i>n</i> =207)	M (SD)	49.8 (28.1)	84.4 (22.0)
>40 years (<i>n</i> =225)	M (SD)	45.9 (28.5)	81.9 (25.2)
Professional background			
Occupational therapist	M (SD)	49.6 (28.0)	85.3 (22.1)
Nurse	M (SD)	49.5 (28.9)	81.7 (23.5)
Social work	M (SD)	41.9 (27.4)	80.6 (25.5)
Psychology	M (SD)	52.2 (28.7)	88.4 (20.1)
Student	M (SD)	45.1 (33.7)	82.7 (27.9)
Psychiatry/Medical	M (SD)	43.9 (29.3)	85.1 (26.1)
Years working in mental health			
<5 years (<i>n</i> =344)	M (SD)	44.3 (28.9)	85.4 (21.6)
5-10 years (<i>n</i> =260)	M (SD)	50.0 (28.6)	82.5 (24.8)
10+ years (<i>n</i> =200)	M (SD)	48.9 (28.6)	81.7 (24.8)
Years working in early psychosis			
<5 years (<i>n</i> =543)	M (SD)	47.7 (28.9)	85.2 (22.4)
5-10 years (<i>n</i> =144)	M (SD)	50.7 (28.1)	80.5 (25.3)
10+ years (<i>n</i> =27)	M (SD)	49.2 (30.4)	81.1 (22.8)
Time spent in the clinic			
0-25% (<i>n</i> =83)	M (SD)	44.4 (29.4)	84.2 (21.0)
25-50% (<i>n</i> =35)	M (SD)	48.3 (32.1)	80.3 (27.2)
50-70% (<i>n</i> =119)	M (SD)	45.0 (28.7)	78.2 (28.0)
75-100% (<i>n</i> =762)	M (SD)	48.3 (28.7)	85.7 (21.9)

Minerva Access is the Institutional Repository of The University of Melbourne

Author/s:

Macneil, C;Foster, F;Nicoll, A;Monfries, R;Coulson, L;Osnnan, H;Grainger, M;Cotton, S

Title:

Effectiveness of a professional development training program in increasing knowledge of mental health clinicians specializing in early psychosis

Date:

2019-08-01

Citation:

Macneil, C., Foster, F., Nicoll, A., Monfries, R., Coulson, L., Osnnan, H., Grainger, M. & Cotton, S. (2019). Effectiveness of a professional development training program in increasing knowledge of mental health clinicians specializing in early psychosis. *EARLY INTERVENTION IN PSYCHIATRY*, 13 (4), pp.1003-1010. <https://doi.org/10.1111/eip.12785>.

Persistent Link:

<http://hdl.handle.net/11343/285353>