Supervising trainees in research: what does it take to be a scholarly project supervisor?

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Abstract

Objectives: Scholarly projects (SPs) are a compulsory component of psychiatry training in Australasia. This article outlines the role of a research supervisor in supporting a trainee to complete an SP.

Methods: A total of 10 old age and forensic psychiatry SPs were reviewed with regard to aims, methodology, supervisor input, trainee tasks and additional resources.

Results: The main supervisor tasks are described and discussed. They include practical advice on study design, ethics applications, critical appraisal, data analysis, academic writing and publication.

Conclusions: Supervising SPs can bring significant rewards in awakening a trainee's interest in research. Key competencies for research supervision are discussed and further recommendations for supervisor support and training are provided.

Keywords: research, scholarly project, supervision, psychiatry training

In 2012, the scholarly project (SP) was reintroduced to the Royal Australian and New Zealand College of Psychiatrists (RANZCP) fellowship programme. The aim is to enable trainees to develop research interest and skills. Trainees can select a topic and decide on a research format. The scope is broad and can include a quality assurance project or clinical audit, a systematic critical literature review, original and empirical research (qualitative or quantitative) or a case series. The concept of the SP will be familiar to psychiatrists who trained prior to 2003, at which time a 10,000-word dissertation was a necessary fellowship requirement. SPs have historically been a component of subspecialty old age, forensic and consultation liaison training. Now that SPs are compulsory, there is a need for supervisors to develop skills to supervise trainees in their specific research endeavours. This may raise questions for psychiatrists who have limited experience in supervising research, such as: what are the required competencies to supervise SPs? Should there be specific training? Is there an implicit expectation to supervise SPs, similar to clinical supervision?

Previous literature relating to SPs has primarily focused on trainee needs.[1,2] A mentoring framework for SP supervision may include: how and when to get started; the supervisor–supervisee relationship; framing a question; planning and designing a study; conducting a study and project management; completing and submitting the project; and troubleshooting.[3] However, a lack of clarity about the scope, choice, and standard of SP is a potential barrier to psychiatrists providing supervision. In addition, psychiatrists may not believe they have the requisite research experience or skills. This paper shares a decade's experience of supervising SPs in the subspecialties of old age and forensic psychiatry. The examples illustrate the breadth of supervisory skills and the various tasks involved in SP supervision.

Methods

A total of 10 consecutive old age and forensic psychiatry projects were reviewed. These had been directly supervised by two authors (GC and SHF) and passed the training requirements for subspecialty certificates of advanced training. The SP reports or publications were read by the respective supervisor with a focus on methodology. This served as a memory aid for the supervisor

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to recall the supervisor inputs, trainee tasks and additional resources required. The trainee supervisees were then invited to review the collated data which were further refined.

Results

The old age and forensic psychiatry projects are shown in Tables 1 and 2. The main supervisor tasks included advice and support for: critical literature analysis skills; refining the research question; study design; ethics advice; constructing a database; completing data analysis (both qualitative and quantitative); and academic writing for publication.

Discussion

The RANZCP emphasises that trainees must have a principal SP supervisor who is an accredited supervising Fellow (in New Zealand an affiliate member of the College can be the principal supervisor). Trainees can seek an additional co-supervisor with specific expertise in the area of study who does not need to be a RANZCP Fellow.

The RANZCP SP Education Training Procedure provides brief guidelines (Box 1) on the role of a supervisor that approximate our experiences of supervising old age and forensic psychiatry projects.

Guiding the trainee to pertinent literature to be reviewed

Trainees will develop skills to perform a literature review by undertaking an SP. These skills are critical for trainees who choose a systematic literature review; or in determining what research is needed to answer their research question. Given that these skills are critical, a supervisor should ensure that the trainee has current skills to perform a literature review. Medical librarians are often willing to support trainees on an individual basis to advise on choices of keywords, search terms, inclusion and exclusion criteria, and databases. The literature review also includes critical appraisal and organisation of the findings, which in turn informs the final SP report and meets the requirements of the SP marking domains of 'literature review' and 'discussion'.

Development of scholarly question(s) or hypothesis(es)

Supervisors will need to use their judgement to critically evaluate the quality of the literature review performed by a trainee. It is of little utility for a trainee to undertake a project with a research question that has previously been answered, no matter how interesting the topic is. We view the trainee as the owner of the SP and believe that they should choose the topic of interest under the supervisor's guidance, particularly if our aim is to

develop scholarly thinkers who will be interested in pursuing research in the future.

A supervisor should have a good understanding of study design and guide the trainee on the most appropriate methodology to address the research question(s) and/or hypothesis(es). When a supervisor identifies a gap in their own knowledge on the chosen research methodology, support from a co-supervisor with expertise in that area can be considered.

We recommend consulting a biostatistician at a university department early as part of the process of developing a research question and study design. This can avoid making mistakes later on when performing statistical analysis and is especially beneficial for less-experienced supervisors. We encourage the supervisor and trainee to jointly meet with the biostatistician which creates a learning opportunity for all.

Advising about timeframe

The SP should be successfully completed by the time the trainee has finished 60 months of full-time equivalent training. Trainees are advised to start their SP early in stage 1 training to allow time for various ethics, organisational and governance approvals.[4] However, we acknowledge that trainees have other training tasks and demands in their personal life. A supervisor and trainee should negotiate a realistic timeframe for completion of the SP. Research and writing may take longer than expected; it is our experience that a SP takes an average of 18 to 24 months to complete. The use of a Gantt chart[5] can be a useful way to monitor progress.

Assisting with data collection and analysis

Most trainees have limited or no prior research experience. For quantitative research, a supervisor should have some knowledge of data collection and analysis (including statistical software packages such as the Statistical Package for the Social Sciences (SPSS)). For qualitative research, a supervisor should have some experience of thematic analysis.[6] A more advanced understanding of other qualitative methodologies such as grounded theory is desirable. A supervisor may be required to perform analysis independently from the trainee and understand the concept of triangulation to enhance the rigour of analysis. Knowledge about qualitative data analysis computer software packages such as NVivo and CAQDAS can be useful when there is a significant amount of qualitative data. A supervisor can direct their trainee to enrol on a SPSS or NVivo training course offered by medical libraries and private consulting firms.

Providing advice and guidance in the conduct of the research and writing up

A supervisor should be familiar with the Branch Training Committee SP approval process, as well as national, hos-

Table 1. Psychiatry of old age projects

Title	Aims	Methodology	Supervisor inputs	Trainee tasks	Additional resources
Sensitivity and specificity of the GAI and the HADS in the detection of anxiety disorders in older people with COPD	To evaluate the sensitivity and specificity to 2 self-administered anxiety rating scales in older people with COPD	55 older people with COPD completed the GAI and the HADS along the MINI. The outcomes of both rating scales were compared against the diagnosis of anxiety disorders based on the MINI. Receiver operating characteristic curves were used to identify the optimal diagnostic cut points for each scale.	- Collaboration with respiratory team - Study design - Ethics application - Support for data analysis - Write up for publication	- Literature review - Data collection - Data analysis - Write up for college requirement & publication	- Medical student (summer studentship) assisted in data collection - Support from a biostatistician
Utility of the ACE-R in detecting dementia in an Auckland memory clinic sample	To evaluate the utility of the New Zealand version of ACE-R as a cognitive test to detect dementia in an Auckland memory clinic sample	Retrospective study of the medical records of 145 patients who attended the Auckland District Health Board Memory Clinic from December 2008 to December 2011.	- Ethics application - Sourcing data	- Literature review - Study design - Data cleaning - Data analysis - Write up for college requirement	
Reactions to driving cessation – A qualitative study of people with dementia and their families	To explore the psychosocial and adjustment issues following driving cessation for people with dementia and their supporters	7 people with dementia and their supporters were interviewed within 1 month of driving cessation advice, and again 6 months later. Issues associated with driving cessation were explored in semi-structured interviews.	- Forming a research team - Study design - Support for ethics application - Grant application - Write up for publication	- Literature review - Ethics application - Conducting qualitative interviews - Qualitative analysis - Write up for college requirement & publication	- Grant to cover transcription cost - Qualitative methodology supported by an academic social worker
Performance of the MNT in a sample of older New Zealanders	To evaluate how the MNT is performed against 3 commonly used bedside cognitive screening tools and compare the findings with the US population	A convenience sample of 42 cognitively intact older people completed the MNT, Mini-Mental State Examination, ACE-R and the Trail Making Tests.	- Support for study design - Support for data analysis - Write up for publication	- Literature review - Study design - Ethics application - Data collection - Data analysis - Write up for college requirement & publication	
Why do older people refuse resuscitation? A qualitative study examining retirement village residents' resuscitation decisions	To investigate the resuscitation preferences of older New Zealanders in a retirement village/residential care setting, as well as the reasons for these preferences	37 participants from 2 retirement villages were interviewed using a hypothetical case-vignette about cardio-pulmonary resuscitation followed by a semi-structured interview. Interviews were subsequently transcribed and analysed by 2 independent researchers using thematic qualitative methodology.	- Support for study design - Ethics application - Thematic analysis - Write up for publication	- Literature review - Study design - Transcribing interviews - Thematic analysis - Write up for college requirement & publication	- Semi-structured interviews completed by a medical student (summer studentship)

ACE-R: Addenbrooke's Cognitive Examination –Revised; COPD: chronic obstructive pulmonary disease; GAI: Geriatric Anxiety Inventory; HADS: Hospital Anxiety and Depression Scale; MINI: Mini International Neuropsychiatric Interview; MNT: Maze Navigation Test; US: United States

Table 2. Forensic psychiatry projects

Title	Aims	Methodology	Supervisor input	Trainee tasks	Additional resources
Checking and balancing New Zealand's mental health review tribunal: perspectives of forensic patients	To examine perspectives of New Zealand forensic patients who applied for MHRT hearings regarding their compulsory detention	Semi-structured interviews completed with 10 forensic subjects participating in mental health review tribunals	- Study design - Support for ethics application - Write up for publication - Supervise presentation	- Literature review - Study design - Ethics application - Data collection - Data analysis - Write up for college requirement & publication - Presentation at international meetings	- Co-supervisor was academic mental health lawyer with prior research experience in MHRT
Fitness to stand trial in the New Zealand youth court: characterising court-ordered competence assessments	To describe characteristics of young people (age 12–17) referred for assessment by forensic mental health services	Retrospective review of court reports of 119 youth requiring court-ordered forensic evaluations	- Study design - Teaching database creation - Teaching about interpretation of data analysis - Write up for publication	- Literature review - Study design - Data collection & database development - Data analysis - Write up for college requirement & publication - Presentation at international meetings	
New Zealand youth fitness to stand trial: the impact of age, immaturity and diagnosis on evaluator opinions and court determinations	To capture a cross-sectional view of how fitness (competency) to stand trial is addressed in the youth court, and how evaluator opinions correlate with ultimate court findings	Retrospective review of court reports for fitness to stand trial in 79 youth consecutively referred to the Regional Youth Forensic Service, then correlated with youth court outcomes obtained from the Ministry of Justice	- Study design - Support for Ethics application - Teaching database creation - Teaching about interpretation of data analysis - Write up for publication	- Literature review - Study design - Ethics application - Data collection & database development - Data analysis - Write up for college requirement & publication - Presentation	- Colleagues recruited for assistance with data collection - Collaboration with youth court judge
Treatment for mentally ill sex offenders: critical analysis of the literature	To examine effective treatments for sexual offenders who also suffer from schizophrenia/psychotic disorder, bipolar disorder or recurrent depression	Systematic review and critical analysis of medical and psychological literature	- Design of review - Teaching critical analysis skills - Write up for publication	- Design of review - Literature search & analysis - Write up for publication & for college requirement - Local presentation	
Systematic review of first time sexual offenders age 65 and above	To examine and describe the common socio-demographic and clinical characteristics of first time older sex offenders	Systematic review of medical and psychological literature	- Design of review - Teaching critical analysis skills (e.g. search terms, how to analyse studies) - Write up for publication	- Design of review - Literature search & analysis - Write up for publication & for college requirement - Local presentation	- Collaboration with old age psychiatrist as co-supervisor - Recruitment of house officer interested in psychiatry to assist in systematic review of literature - Medical librarian very helpful

Box 1. Supervision of the scholarly project (RANZCP 2012 Fellowship Program Regulations, Policies and Procedures: scholarly project chapter)

Supervision of the scholarly project could take the form of regular meetings and discussions with the trainee. The supervisor's role could include:

a)   guiding the trainee to pertinent literature to be reviewed;
b)   helping with the development of a scholarly question(s) or hypothesis(es);
c)   advising the trainee about the timeframe for completing the project;
d)   providing advice and guidance in the conduct of the research and writing up.

The supervisor may also assist the trainee with data collection and/or analysis but should not undertake or subsume the project tasks for the trainee.

The scholarly project supervisor or co-supervisor should be contactable by the Scholarly Project Subcommittee and the Branch Training Committee.

Box 2. Marking domains of scholarly projects

a)   Clinical relevance;
b)   Presentation and content;
c)   Objectives and/or hypotheses;
d)   Literature review;
e)   References;
f)   Methodology;
g)   Results;
h)   Discussion; and,
i)   Conclusion.

pital and university ethics approval processes as there are different requirements for varying types of research. Hospital and university-based research offices can support a trainee to negotiate these processes. We believe that ethics applications should process with the support and direction of the supervisor but project ownership should belong to the trainee.

As with other good educational approaches, a supervisor should be aware of the SP marking domains (Box 2) so they can align supervision activities and their advice with the assessment.

Most trainees require support for academic writing.[7,8] A reference management system such as EndNote or RefWorks can be valuable in conducting a literature review and as an aid to writing more efficiently. One important task of the supervisor is editing a trainee's writing. Seeing the work published in an academic journal is rewarding. Trainees should be encouraged to publish the project in a peer-reviewed journal and present their work at meetings or continuing medical education sessions.

The process of research supervision

There is no set prescription for high quality research supervision.[9] The supervisory relationship is a highly mutual and interactive process that contributes to a trainee's productivity and research quality.[10–12] The SP is a major focus of academic energy; supervisors must be committed to investing time and energy in the trainee to develop the relationship.[13] There are many aspects of SPs that motivated trainees are capable of handling outside of meetings with the supervisor. However, unless the trainee has prior research experience, they are likely to need significant guidance regarding critical research tasks. Trainees value a research supervisor who has a caring attitude, provides timely and constructive feedback, and, has expertise in the trainee's area of interest.[9] The capacity to guide, stimulate and inspire may encourage further research collaborations.[10]

Recommendations and conclusion

Supervising an SP can be immensely rewarding, on a personal and a mentoring level. However, SP supervision is not for everyone and herein we have illustrated the breadth of skills required. To ensure our trainees a quality learning experience, we need to take care with SP supervision. A lack of experience can lead to supervision problems. Offering supervisors the opportunity to upskill may develop research excellence and promote timely completion.[11]

We recommend that supervisors understand the above roles and responsibilities before taking on a trainee with an SP. A potential supervisor should consider their experience in research and academic writing. Supervisors may need support that could include an academic co-supervisor, attending a course (refer to Box 3) or peer review groups (e.g. with an academic acting as the supervisor for the supervisors).[17] The RANZCP could continue to host research courses for psychiatrists and trainees at the annual Congress and potentially develop e-learning modules on its Learnit platform. Supervisors should seriously consider whether they have the time to supervise if they require significant upskilling. We hope that this paper will start a conversation to help shape a governance structure around SP supervision.

Box 3. Research training and learning resources

Research in Psychiatry, RANZCP:
- *https://www.ranzcp.org/Publications/Research-in-psychiatry.aspx*

Australasian Psychiatry research training virtual issue:
- http://journals.sagepub.com/page/apy/virtual-special-issues/research-training

Research methods short courses:
- European Educational Programme in Epidemiology. Residential Summer Course in Epidemiology. http://www.eepe.org/courses/
- University of Oxford. Department for Continuing Education. Introduction to Study Design & Research Methods. https://www.conted.ox.ac.uk/courses/introduction-to-study-design-research-methods?code=O16C177B9Y
- University of Oxford. Department for Continuing Education. Essential Medical Statistics. https://www.conted.ox.ac.uk/courses/essential-medical-statistics
- University of Oxford. Centre for Statistics in Medicine. Randomised Controlled Trial Course RANDOMISED CONTROLLED TRIAL COURSE: A Guide to Design, Conduct, Analysis, Interpretation and Reporting. https://www.csm.ox.ac.uk/upcoming-events/rct-course-2016
- University College London. Research Department of Infection and Population Health. Research Methods Short Course. https://www.ucl.ac.uk/iph/events/events/researchmethods
- The University of Melbourne. Faculty of Medicine, Dentistry and Health Sciences. Qualitative Research Interviews: Principles and Practices. http://mdhs-study.unimelb.edu.au/short-courses/mms-short-courses/qualitative-research-interviews-principles-and-practices/overview#overview
- Monash University. School of Public Health and Preventive Medicine. Qualitative Research Methods for Public Health. http://www.med.monash.edu.au/sphpm/shortcourses/qualitative-research-aug-2016.html

Qualitative analysis:
- Braun V and Clarke V. Using thematic analysis in psychology. *Qual Res Psychol* 2006; 3: 77–101.[6]
- Whitley R and Crawford M. Qualitative research in psychiatry. *Can J Psychiatry* 2005; 50: 108–114.[14]

Academic writing:
- Pinker S. *The sense of style: The thinking person's guide to writing in the 21st century*. London: Penguin Books, 2015.[7]
- Sword H. *Stylish academic writing*. Cambridge, Mass.: Harvard University Press, 2012.[8]
- Vluggen, PMJ and Hansen PA. The case for structuring the discussion of scientific papers. *BMJ* 1999; 318: 1224–1225.[15]
- Roberts LW, Coverdale J, Edenharder K, et al. How to review a manuscript: a 'down-to-earth' approach. *Acad Psychiatry* 2004; 28: 81–87.[16]

References

1. Suetani S, Gill S and Galletly C. A scholarly endeavour: some practical tips on completing the scholarly project. *Australas Psychiatry* 2015; 23:29–31.
2. Looi JC. Research training. *Royal Australian and New Zealand College of Psychiatrists*. http://journals.sagepub.com/page/apy/virtual-special-issues/research-training (2014, accessed 1 May 2017).
3. Looi JC, Kisely S, Macfarlane MD, et al. A guide to clinical research supervision for psychiatrists: a mentoring approach. *Australas Psychiatry* 2015; 23: 25–28.
4. You D, Glozier N and Kealy-Bateman W. The Scholarly Project in the Royal Australian and New Zealand College of Psychiatrists training program: getting up and running in Stage 1. *Australas Psychiatry* 2017; 25: 185–186.
5. Wilson JM. Gantt charts: a centenary appreciation. *Eur J Oper Res* 2003; 149: 430–437.
6. Braun V and Clarke V. Using thematic analysis in psychology. *Qual Res Psychol* 2006; 3: 77–101.
7. Pinker S. *The sense of style: The thinking person's guide to writing in the 21st century*. London: Penguin Books, 2015.
8. Sword H. *Stylish academic writing*. Cambridge, Mass.: Harvard University Press, 2012.
9. Kam BH. Style and quality in research supervision: The supervisor dependency factor. *Higher Educ* 1997; 34: 81–103.
10. Bland CJ and Schmitz CC. Characteristics of the successful researcher and implications for faculty development. *J Med Educ* 1986; 61: 22–31.
11. McCallin A and Nayar S. Postgraduate research supervision: a critical review of current practice. *Teach Higher Educ* 2012; 17: 63–74.
12. Severinsson J. Research supervision: supervisory style, research related tasks, importance and quality – part 1. *J Nurs Management* 2012; 20: 215–223.
13. Lambert MT and Garver DL. Mentoring psychiatric trainees' first paper for publication. *Acad Psychiatry* 1998; 22: 47–55.
14. Whitley R and Crawford M. Qualitative research in psychiatry. *Can J Psychiatry* 2005; 50: 108–114.
15. Vluggen PMJ and Hansen PA. The case for structuring the discussion of scientific papers. *BMJ* 1999; 318: 1224–1225.
16. Roberts LW, Coverdale J, Edenharder K, et al. How to review a manuscript: a 'down-to-earth' approach. *Acad Psychiatry* 2004; 28: 81–87.
17. Emilsson UM and Johnsson E. Supervision of supervisors: on developing supervision in postgraduate education. *Higher Educ Res Dev* 2007; 26: 163–179.