

Implementing portfolio in postgraduate general practice training

Benefits and recommendations

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ABSTRACT

تقدم هذا الورقة مراجعة لاستكشاف الأبحاث التي تركز على الملف التدريبي في تدريب الممارسة العامة للدراسات العليا، واختبار تأثير تطبيق الملف التدريبي في عملية التعلم، بالإضافة إلى اقتراح توصيات لتطبيقه في تدريب الممارسة العامة للدراسات العليا. نفذ البحث الإلكتروني على عدة قواعد بيانات التي تطرقت للملف التدريبي في تدريب الممارسة العامة للدراسات العليا. شمل البحث 6 أبحاث لتبين بصفة خاصة فاعلية الملف التدريبي في تدريب الممارسة العامة للدراسات العليا. وصفت 5 منها التجارب الناجحة لتنفيذ التعلم على أساس الملف التدريبي. ووصف بحث واحد فقط التقييم على أساس الملف التدريبي في تدريب الممارسة العامة للدراسات العليا. يوفر الدليل الحالي فوائد مختلفة للتعلم على أساس الملف التدريبي المحترف. كما يظهر أن لديه ميزات التعلم الانعكاسي المثير، ويشجع التعلم الإيجابي، ويجسر تجارب المستشفى للمتعلمين إلى الممارسة العامة. علاوة على ذلك فإن التحديات في تطبيق التعلم على أساس الملف التدريبي غالباً ما تعتمد في كثير من الأحيان على أساس توجه و تدريب متسلمي الأمور.

This paper presents a review to explore the literature focusing on portfolio in postgraduate general practice (GP) training, and to examine the impact of implementation of portfolio on learning process, as well as proposing recommendations for its implementation in postgraduate GP training. An electronic search was carried out on several databases for studies addressing portfolio in postgraduate GP training. Six articles were included to address specifically the effectiveness of portfolio in postgraduate GP training. Five of them described successful experiences of portfolio-based learning implementation. Only one article addressed portfolio-based assessment in postgraduate GP training. The existing evidence provides various benefits of professional portfolio-based learning. It does appear to have advantages of stimulating reflective learning, promoting proactive learning, and bridging the hospital experiences of the learners to GP. Moreover, the challenges to implementation of portfolio-based learning are often based on orientation and training of stakeholders.

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A portfolio is widely acknowledged as an important learning tool in educational literature. It has become a popular learning tool in medical education for both undergraduate and postgraduate. However, there is little literature on the subject of portfolio in postgraduate general practice (GP) training, but the available evidence will be utilized to address the importance of professional portfolio in medical education and its effectiveness in postgraduate GP training. Trainees in postgraduate GP training facing a lot of clinical placements in different specialties throughout their training years. These placements sometimes necessitate learning of new facts and skills, and a change in attitude. However, this review will focus on implementing portfolio in postgraduate GP training as trial before generalizing it to other speciality training. Therefore, the purpose of this paper is to contribute to a better understanding of a portfolio in general, and looking for its effectiveness in postgraduate GP training through reviewing the literature. Currently, portfolio is not used in postgraduate GP training in the Kingdom of Saudi Arabia (KSA), so the findings of this paper and recommendations play an important role in determining, regarding whether or not, to adopt or implement portfolio in postgraduate GP training in KSA.

The paper starts by considering the definitions of portfolio in general and in professional context. The paper then continues to briefly trace the background, and using of portfolio in medical education in general, and in GP in particular. The paper then proceeds to review the literature for evidence of portfolio effectiveness and impact in postgraduate GP training. Finally, this paper proposes some recommendations for planning and implementing of learning portfolio in postgraduate GP training in KSA.

The main purpose of this review is to obtain a better understanding on portfolio in medical education generally, and in GP in particular, and to examine its efficacy and impact in postgraduate GP training.

Data for this review were gathered from the following electronic databases: SCOPUS (1960-Feb 2012), OVID (1948-Feb 2012), EMBASE (1966-Feb 2012), CINAHL (1981-Feb 2012), ERIC (1960-Feb 2012), and PsycINFO (1806-Feb 2012). The search terms were combination of these key words: portfolio, GP, family medicine, primary health care, education, teaching, and learning. Language restriction was used to limit the search to articles in English language only. The relevant articles were selected using manual search. Further search was conducted using the bibliographies of full text articles. The main inclusion criterion used was that the publication had to focus on professional portfolio in postgraduate GP training.

Broad review of the term "portfolio". The term "portfolio" is not a new term; it was derived from the Italian word "portafoglio," meaning a stiff folder or case for holding papers or prints, first appeared in an isolated attestation in 1556. Known alternately as "portafogli" by 1804, the term entered into popular use in Western Europe and the United Kingdom, as well as North America during the nineteenth century. From the Latin "porta," the imperative of "portare," or carry, plus "foglio" (from the classical Latin "folium"), or leaf, the device became referred to as "portefeuille," "portofolio," "portefolio," "port-folio," and finally "portfolio" by the mid-1830s.¹ It may be undertaken for personal or professional purposes, with either paper-based form or electronic form. However, portfolio represents person's achievement through systematic records and to be reviewed by someone else who is in a position to evaluate its contents. Portfolio had become widely used in the educational field and was defined as a systematic documentation of student's performance.² However, more comprehensively, portfolio can be defined as "a purposeful collection of student's work that exhibits the student's efforts, progress, and achievements in one or more areas. The collection must include student

participation in selecting contents, the criteria for selection, the criteria for judging merit, and evidence of student self reflection".³

Broad review of the term "professional portfolio".

A professional portfolio is a compilation of evidence and materials, made by professional, that reflects on developmental process and illustrate a professional's career.⁴ It enables professional persons to monitor their competence over a period of time. The collected materials in the portfolio provide evidence of what has been achieved to meet professional and personal learning needs and progress. Brown⁵ provides a new definition for professional portfolio who saw it as "a private collection of evidence, which demonstrates the continuing acquisition of skills, knowledge, attitudes, understanding, and achievement. It is both retrospective and prospective, as well as reflecting the current stage of development and activity of the individual".⁵

Professional portfolio in medical education.

Portfolios are used in different ways according to the instructional purpose, and they are useful indicator of gaps in training programs.⁶ The past 2 decades have seen the introduction of professional portfolios to medical education as learning and assessment tools.^{7,8} They provide evidence of the learner's work, progress, achievement, and plans for professional competence. However, professional competence in medical education involves interaction and integration of knowledge, skills, values, ability for communication, clinical reasoning, and self reflection.⁹ Therefore, portfolios have been used as potential tools to stimulate reflective learning,^{10,11} in order to measure professional development. Reflection in learning process is defined as the mental process of trying to restructure an experience, a problem, or existing knowledge, or insights,¹² and considered as benchmark for professional development.^{13,14} In particular, reflection for learning in portfolio includes achievement monitoring, learning needs identification, and learning plan development.¹⁵ Therefore, professional portfolio provides a great learning tool in professional development and reflective practice.

Development and structure of professional portfolio.

Introducing portfolio to the learners can be a challenging task. Many learners may not be comfortable approaching portfolio, and may be resistant to a new process. Introducing portfolio with support from the trainers (or the educational supervisors) can help learners foster an understanding process of engagement and recording reflection of their work,⁴ and appreciation of portfolio-based learning. However, the learner takes responsibilities for development of professional portfolio (identifying the learning needs and setting the

Table 1 - Contents of a portfolio.

1. Cover page including the learner's name, profession, year of training and supervisor's name.
2. Contents page containing a list of page numbers and different items in portfolio.
3. Learning objective section.
4. Reflection overview section.
5. Section of evidence collection (for example; letters, articles, presentations, reports, and so forth)

objectives), its maintenance (evidence collection and reflection), and its presentation for evaluation.

The structure of professional portfolio in medical education needs to facilitate demonstration of the learner's objectives achievement and progression.¹⁵ Therefore, the contents of portfolio is provided in Table 1.

Assessment of professional portfolio. Assessment is an part integral to any learning process, promotes learning, and recognises educational achievements. Assessment of the portfolio facilitates reflective learning, and gives feedback regarding the learner's achievement and progress. It can be obtained in 2 ways: by the learner (self assessment); or/and by the trainer or supervisor (external assessment). Self-assessment is an essential component of self-directed learning,¹⁶ that can help learner to adjust learning needs and objectives. External assessment is a subjective process that goes on within the mind of the assessor, during the process of portfolio assessment. Therefore, portfolio assessment should be carried out within a set of principles that include standardization of portfolio contents, criteria for assessment, and clear instructions to the learners.¹³

Using a portfolio for both learning and assessment can cause problems with validity and reliability of the assessment tool.^{14,17-19} When a portfolio is used to assess the learner formatively, it will facilitate learning and reflection.²⁰⁻²³ On the other hand, using a portfolio in summative assessment creates many queries regarding its validity and reliability.²¹⁻²⁴ However, the learners are reluctant to admit any difficulties, or learning weakness when a portfolio is used in summative assessment.^{14,17,18}

Portfolios in GP. Paper-based portfolio. In the literature, there have been very few attempts to compare the portfolio-based learning to traditional learning models in postgraduate GP training. Challis et al²⁵ attempted to compare portfolio-based learning to postgraduate education allowance (PGEA) model using cross-over design, in which 34 GPs, were divided

into 2 cohorts, the first group spent 6 months following portfolio-based learning, while the other group followed PGEA-based learning, then cross-over for the next 6 months. The portfolio in this survey should include development of personal educational plan, collection of evidence of what has been achieved to meet learning objectives, and mutual support from co-monitoring group. Two approaches (qualitative and quantitative) were used as a midpoint evaluation to explore GPs perception on learning needs and how these were met, time spent in different learning activities, and involvement of others in meeting learning objectives. However, this study concluded that GPs are willing to generate their own educational plan, and identifying learning needs using the process of reflection on current practice; the mentor groups were seen as an effective methods for facilitating the portfolio process.

Pearson and Heywood²⁶ conducted a mixed approach survey to explore UK GP registrars regarding their use of portfolios to collect evidence and for reflection, as well as to identify factors affecting use of portfolios in GP training. The study shows that almost two-thirds of GP registrars recorded information and collected evidence on a regular basis, 42% used portfolio in reflective learning, those with supportive mentoring used the portfolio in reflective learning, and less use of portfolio by experienced GP registrars. However, the study suggested that encouragement of supervisor facilitate reflective use of portfolio, the implementation of portfolio-based learning requires careful planning and training, and further work concerning establishing portfolio in reflective learning might be of great value.

Snadden and Thomas¹⁸ described the process of implementing portfolio-based learning model into GP training in one UK region, and examined its impact on registrars and trainers. The main aims of this study were to implement, and evaluate reflective learning strategy in GP discipline not familiar with portfolio; to plan the usefulness of portfolio in GP vocational training; and to examine the effectiveness of facilitator in portfolio learning model. Qualitative method approaches have been used in this study and data was collected over 2 years using semi-structured interview of the participants. However, the decision of participants to start and maintain the use of portfolio was influenced by 3 factors: confidence; supportive trainer-trainee relationship; and the MRCGP exam that occur at the time of the study. The authors concluded that portfolios have a useful role in GP vocational training, valuable tool for formative assessment, and act as a bridge between the hospital and GP.

Mathers et al²⁷ continued follow up of participants of Challis' project when they described the comparison between traditional CME activities and portfolio-based learning method using cross over design over 6 months in GP discipline. Data were collected using both qualitative and quantitative approaches together with participants' observation and review of completed portfolios. However, this study concluded that portfolio-based learning enabled GPs to be proactive in their learning; represented a model of good educational practice for adult learning; facilitated completion of learning cycle through providing evidence of application of learning to the practice; promoted an increase in self knowledge; and mentoring groups were helpful.

Online portfolio. Interest in online portfolios has grown-up in recent years, with hundreds of colleges and universities beginning portfolio initiatives and several groups of institutions collaborating to develop technological platforms and tools.²⁸

Kjaer et al²⁹ described the introduction of an online portfolio in postgraduate family medicine training. Participants in this project included 90 GP trainees. Data was collected by online questionnaire using both quantitative and qualitative designs. However, the findings of this study revealed that portfolio enabled trainees to monitor their progress and was a valuable tool in facilitating feedback and reflection. In addition, this study found that portfolio is not the suitable tool for summative assessment. This finding supported the previous results published by Snadden and Thomas.¹⁸ Some obstacles were found with the online portfolio-based learning. These includes lack of time, lack of support by supervisors, lack of Information technologies (IT) support, ambiguity of introduction, and lack of personal inspiration.

Kim et al³⁰ conducted a study to measure family medicine residents' satisfaction of a paper-based portfolio assessment system, and to describe implementation of a web-based portfolio assessment system. This study showed significantly low level of satisfaction with paper-based portfolio assessment system. Lack of orientation, and lack of time or pressure of time were the possible reasons for this low satisfaction level. However, web-based portfolio assessment system has many advantages over traditional paper-based portfolio assessment system, and expected to improve family medicine residents satisfaction level.

Conclusion. So far, this review has focused on professional portfolio in medical education, their uses and effectiveness in postgraduate GP training, however, little has been written regarding the portfolio in GP training. It has been demonstrated that portfolio-

based learning in medical education does appear to have advantages of stimulating reflective learning.^{10,11} However, reflective learning has become increasingly important in postgraduate programs where reflective learning promotes identification of learning needs and development of learning plan through engagement of the learner in the learning process. This concept was clearly addressed by Korthagen and Kessels¹² when they stated that reflective learning has a central role in professional development. Development of portfolio is the responsibility of the learner, with the trainer guidance and support to identify learning needs, and setting objectives. However, to avoid personal nature of the portfolio, it is preferred that the portfolio be generated according to preset standards to meet its purpose.¹⁵

Assessment of the portfolio remains a hot topic in medical education literature. Portfolio has been criticized as a tool used for summative assessment.²¹⁻²⁴ However, it has been well-established that using portfolio for formative assessment has beneficial effects on facilitating reflective learning, and promoting professional development.²⁰⁻²²

The major goal of this review was to assess the efficacy of portfolio-based learning in postgraduate GP training. However, there was little discussion in the literature about success and efficiency of portfolio in postgraduate GP training. Six articles only were identified. Five articles discussed portfolio-based learning, while one article only described portfolio-based assessment. Two articles out of 6 were concerned with electronic portfolio in postgraduate GP discipline. In 2 comparative studies, Challis and Mathers concluded that portfolio-based learning outweighs traditional CME activities.^{25,27} Snadden and Thomas¹⁸ described the success process of implementing portfolio in GP training. Perception of GP registrars regarding their use of portfolio were explored by Pearson and Heywood.²⁶ The results were positive and supportive to the use of portfolio.²⁶ However, the literature described 2 successful models of electronic portfolios in postgraduate GP training. These 2 models were portfolio-based learning,²⁹ and portfolio-based assessment.³⁰ In relation to the overall advantages of portfolio-based learning in postgraduate GP training; there were a number of benefits, which have been concluded by the most included articles. These benefits are listed in Table 2.

The promise offered by portfolios is tempered by difficulties associated with their implantation. However, lack of orientation and planning, lack of training, and pressure of time were recognized as a main obstacles of implementing portfolio-based learning in GP.²⁶

Table 2 - Benefits of portfolio-based learning in general practice (GP).

1. Portfolio-based learning helps GP learners to map their own educational plan and identifying learning needs through critical self reflection and supportive mentoring.
2. Portfolio-based learning enables GP learners to monitor their progress towards the achievement of educational objectives.
3. Portfolio-based learning provides a powerful and proven means to facilitate feedback and reflection.
4. Portfolio-based learning provides a structured overview of the clinical experiences of GP learners and helps establish learning objectives.
5. Portfolio-based learning helps GP learners to be proactive in their learning experiences.
6. Portfolio-based learning has a practical role in postgraduate GP training through presenting a model of good educational practice for adult learning.
7. Portfolio-based learning helps with bridging hospital experiences of the learners to GP.
8. Portfolio-based learning promotes progress of knowledge and self confidence of GP learners.
9. Mentoring and supervisor encouragement facilitate reflective use of the portfolio.

Table 3 - Recommendation for implementing portfolios in general practice training.

1. Understand the needs for positive changes in educational methods.
2. Recognize advantages of portfolio-based learning and take steps to build confidence through success experiences.
3. Activities should be taken to raise level of awareness among trainers on efficacy of different methods of learning based on available evidence and in particular portfolio-based learning.
4. Introduce portfolio-based learning as a tool for improved learning and assessment. However, due to lack of evidence, avoid using portfolio in summative assessment. Instead, it can be used only in formative assessment to encourage reflective learning process.
5. Develop team of experts to review the possibilities of this implementation through developing change management plan and to take in consideration all strengths, weaknesses, opportunities, and threats.
6. Define a new strategy for moving towards and encouraging training centers to implement portfolio-based learning.
7. Organize orientation training courses and workshops for supervisors and trainers before implantation of portfolio-based learning system.
8. Offer benefits and incentives to different training centers to encourage learners to engage in this type of learning methods.
9. Design standards for implementation and evaluation of this project.
10. Despite available evidence for effectiveness of online portfolio-based learning. It is preferred to defer the implementation of online portfolio to allow time to make decisions regarding evaluation of paper-based portfolio learning system.

Overall, utilizing professional portfolio in medical education raises the level of learners' achievement through promoting reflective learning and practice. It has been demonstrated that there is sufficient evidence to support the effectiveness of portfolio-based learning in postgraduate GP training. Before implementing a portfolio-based learning in postgraduate GP training, several issues need to be considered. Stakeholders should be trained on the portfolio process, including purpose, contents and monitoring. Some useful recommendation for this implantation are outlined in Table 3.

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