

Life Drawing for Medical Students: Artistic, Anatomical and Wellbeing Benefits

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Categories: Medical Education (General)

Received: 16/06/2017

Published: 16/06/2017

Abstract

Background

Stand-alone undergraduate wellness programmes have attempted to address the problem of burnout in medical students. These programmes have however, often encountered resistance from students, who may not perceive the value of self-care techniques in relation to their medical studies. We proposed an alternative process to relax and engage students in positive mental processes, whilst providing clinically relevant skills, through an integrated arts-based student selected module.

Method

A ten-week student-selected module in life drawing was developed. Sessions focused on components of artistic theory, their practical application and relationship to anatomical concepts, delivered within a safe and relaxing environment. Upon completion of the module, students completed a feedback questionnaire outlining their perceptions of the course and self-reported impact on their anatomical and artistic abilities.

Results

A total of 24, year 2 medical students participated in the course. All students agreed to the statement that they had enjoyed the module*, and 96% of students found the module relaxing. All students agreed the module had improved their drawing skills, 83% agreed that it had improved their knowledge of anatomy and 87% believed it to be a worthwhile component of their medical training.

Discussion

The introduction of a Life Drawing module to medical students at UEA has been viewed as a positive experience by all medical students undertaking the module. Results suggest that a carefully designed life-drawing module, could

have a positive impact on student wellbeing, whilst providing practical, clinically applicable skills. In addition to the development of drawing skills, wider benefits of the module include increased observational skills and a better understanding of human anatomy.

* = indicates Strongly agree or Agree with the statement.

Keywords: Art; Wellbeing; Stress-reduction; Medical Humanities

Introduction

Burnout amongst doctors is a pervasive issue within medicine (West et al., 2016) with negative consequences for patient care (Shanafelt et al., 2010; West et al., 2009) as well as physician wellbeing (Shanafelt et al., 2011; West et al., 2012). The problem is foreshadowed at medical school with the reported prevalence of student burnout ranging between 45-71% (W. Ishak et al., 2013). Interventions during undergraduate education, include cognitive behavioural therapy, psychotherapy and mindfulness-based stress reduction (MBSR) programmes (de Vibe et al., 2013; Dyrbye & Shanafelt, 2011). These strategies have focused on stress-reduction, but can be met with resistance by students (W. Ishak et al., 2013).

If presented as a compulsory, standalone component of their medical training, wellness programmes may simply be seen as an unnecessary obligation and a further burden to already over-stretched students. The stigma that persists around mental health and self-care practices presents another barrier to student engagement (W. Ishak et al., 2013). Ideally, any intervention to address wellbeing would provide students with the opportunity to relax and engage in positive mental processes, but be integrated within the curriculum and have a purpose beyond wellbeing.

We proposed a student-selected component (SSC) in life drawing might fulfil these criteria. Life drawing is the artistic practice of drawing a nude figure from direct observation. It offers many of the features of existing wellness interventions, including relaxation, reflection, self-expression, and creativity, whilst potentially having direct benefit to students' medical education.

Medical schools have previously offered life drawing modules to their undergraduates (Phillips, 2000; Smith, 2010). These modules have proved popular, although were largely focused on developing creative and empathetic faculties as opposed to the technical skills of drawing. Arts training has also been used as a supplement to anatomical teaching (Collett & McLachlan, 2005) and, in particular, as a method for improving clinical observation skills (Bardes et al., 2001; Bell & Evans, 2014; Kirklin et al., 2007; Naghshineh et al., 2008; Shapiro et al., 2006). However, these studies have primarily focused on theoretical elements of artistic training, with limited opportunity for students to practically apply their learning in a practical sense.

We therefore designed a module that would retain aspects of artistic theory, but have a greater emphasis on developing drawing skills. Clinically, there are advantages to students improving their ability to draw and communicate pictorially; whether it be surmounting language and literacy barriers during patient consultation (Houts et al., 2006), or furnishing clinical notes with more accurate illustrations.

This article outlines the design of an SSC in Life Drawing and evaluates student response to the module. This study also provides further insight into the integration of the arts within medicine and discusses the potential of drawing as a practical wellness intervention.

Methods

Studies Allied to Medicine

At the University of East Anglia, 2nd Year medical students must undertake a module called "Studies Allied to Medicine" (SAM). SAM is a student-selected-component (SSC) that allows students to explore different areas that complement their core medical curriculum, such as creative writing or foreign language classes. The module is compulsory, but students are free to choose any of the available options. The module is assessed by attendance, with students required to attend a minimum of 80% of the classes.

For the academic year 2015/16, Anatomical Life Drawing was offered as an SAM option, with 12 spaces available per class. Students were asked to choose three of the available options, ranking them in order of preference. Allocations were made on the basis of student preference and course availability.

Design of the Course

The SAM module consisted of ten, 2-hour sessions. The primary aim of the course was to improve the students' drawing ability, and so the content of the sessions was structured with reference to traditional arts training. In keeping with the desire to unify the theoretical and practical elements of arts training, each session was divided into two parts; an introductory talk outlining the day's art theory followed by a series of drawing exercises designed to explore these ideas. These introductory presentations took a variety of formats, including PowerPoint slideshows, drawing demonstrations and discussion of famous artworks.

Week	Session Title & Theme	Learning Outcomes (Students should...)
1	Introduction	Familiarise themselves with the life drawing environment Understand format of the sessions
2	Observation	Understand flaws in our observations and how they impact drawing Develop strategies to improve their observations Utilise basic measuring techniques
3	Gesture	Understand the role of gesture in drawings Start introducing gesture into their drawings
4	Form	Understand basics of constructing their drawing Try breaking the body into simple shapes that relate to anatomical structures
5	Tone	Understand the role of tone in drawings Try using coloured paper, charcoal and chalk to render tone
6	Portraits 1	Understand the basic proportions of the head Apply these to their portrait drawings
7	Portraits 2	Continue previous weeks learning across a variety of different portraits
8	<u>Écorché</u>	Relate surface anatomy to underlying structures and Use this knowledge to create <u>écorché</u> drawings
9	Style	Encounter a variety of different artists and their styles Explore their own style Develop greater autonomy
10	Free Drawing	Repeat exercises from first session Reflect upon their development during the course

Table 1: Overview of each session in the Life Drawing Module

In planning the sessions, thought was given to creating a consistent environment that would be distinct from regular lectures and seminars. Some of these distinctions were a natural consequence of a life drawing class, whilst others were a conscious decision in designing the course. Furniture would be cleared to the back of the room, bar for a semi-circle of chairs centred on the model, conversation was restricted to small breaks and curated musical playlists (inspired by the session's theme) would accompany periods of drawing. It was hoped that these distinctions would ease the required transition from the mentality of a medical student to that of an artist.

Although the module was divided into discrete weekly elements, several overarching themes ran across the sessions. Chief amongst these was the development of observation skills. Although limited to Week 2 on the timetable, observation was an important component of all subsequent sessions. For example, Week 5 discussed the theory of Tone, but focused on improving the students' ability to *observe* tone.

Throughout the course, students were encouraged to reflect upon their work, and identify both the merits and critiques of their drawings. Self-reflection was intended to help develop strategies for students to improve their artwork, and encourage recognition of their progress as artists. The drawing exercises in the final session mirrored the exercises given to the students in Week 1, providing a direct comparison of how their skills had developed over the course.

Assessments of life drawing courses (Phillips, 2000; Smith, 2010) have described the positive impact of exposing students to naked models in a variety of body shapes and ages that are normally absent from medical textbooks. For example, students are able study figures that are more representative of a typical patient or understand how diverse 'normal' bodies can be. For this course, eight models were chosen for the fully nude sessions, with volunteers from the UEA staff sitting during the portraiture classes, in order that students encountered as wide an assortment of physiques and physiognomies as possible.

Finally, since the course was intended for medical students, frequent references were made to anatomy. Structures and their locations were described using anatomical terminology, with muscular and bony landmarks identified as appropriate, thus linking to the medical school anatomy curriculum. Artistic concepts were related to anatomical ones, such as in Week 4, where students constructed the figure using three boxes that related to the head, chest and pelvis. This anatomical influence culminated in Week 8 with students reviving the classical art of *écorché**; creating figure drawings that depicted the underlying anatomy by relating their visual observations to their anatomical knowledge.

Student Evaluation

At the end of the SAM module, students completed a questionnaire evaluating the course. The questionnaire consisted of a series of five-point Likert scaled questions (e.g. 'Please state how much you agree with the following statement: This module improved my drawing skills') and open-ended questions (e.g. 'What aspects of the module have you found most useful/enjoyed the most?'). All feedback was provided anonymously.

**Écorché is the artistic practice of drawing, painting or sculpting a figure that shows the underlying anatomy, for example muscles or bones.*

Results

The addition of Life Drawing to the SAM module was well received, with a surfeit of students choosing the course. To accommodate the unexpectedly high numbers, a second class of 12 students ran alongside the first with the groups alternating between session on Monday evenings and Thursday afternoons. There were a total of 24 students.

Student attendance for the course was at 98%, compared to the 80% minimum required to pass. Questionnaires were administered to students before and after the ten week module.

Pre-module questionnaire

Twenty two of the 24 students completed the pre-course questionnaire, giving a response rate of 92%. The pre-course questionnaire included multiple-choice questions relating to student expectations of the course, for example 'why have you chosen this module?', and their previous artistic experience.

Post-module questionnaire

Twenty three of the 24 students completed the post-module questionnaire, giving a response rate of 96%. The post-course questionnaire included questions relating to student perceptions of the course and its benefits and used a five-point Likert scale ranging from 'strongly agree' to 'strongly disagree'. Results of the post-course questionnaire are presented in Figure 1. All students strongly agreed or agreed that the module improved their drawing skills and 83% of students felt that the module improved their knowledge of anatomy. The students universally enjoyed the module and 96% found the module relaxing, with 87% agreeing that it was a worthwhile component of their medical training.

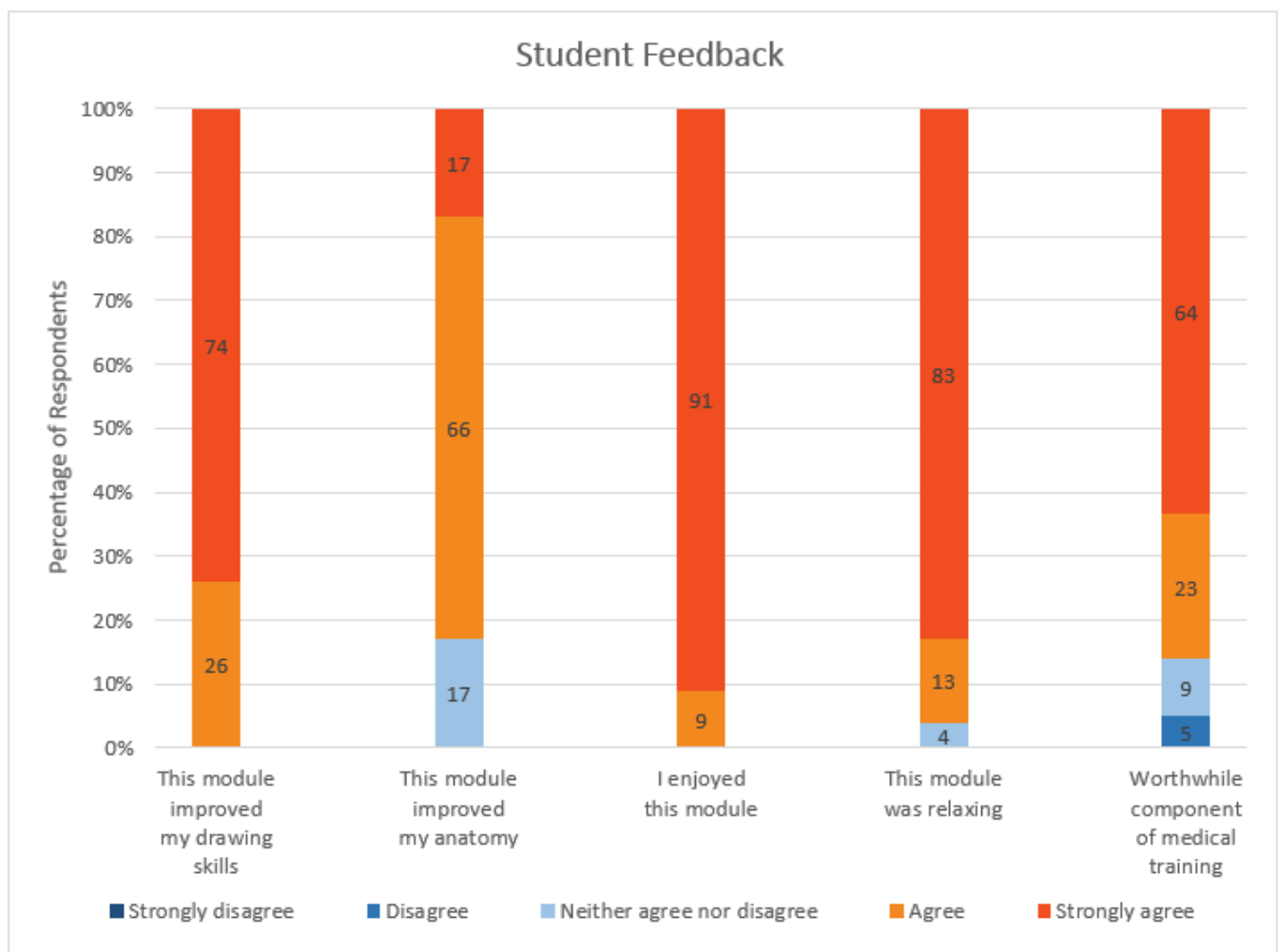


Figure 1: Student feedback from the life drawing module.

Discussion

Improvement in Drawing Skills

Our results indicate that all students self-reported improved drawing skills as a result of the course. The ability to depict visual information accurately has advantages in patient, peer and scientific communication (Houts et al., 2006; Rolandi et al., 2011) and both students and teacher could clearly recognise their development as artists and creative practitioners.

'[I've enjoyed] seeing my improvements'

'I feel like my drawing ability has improved vastly'

The importance of developing clinical observation skills through arts training has been highlighted by several authors (Bardes et al., 2001; Kirklin et al., 2007; Naghshineh et al., 2008; Shapiro et al., 2006). Although no direct assessment was made of the students' observational abilities, this course integrated observational theory into the sessions and therefore an improved ability to interpret visual information might be an indirectly acquired skill. Certainly, flaws in visual perception are commonly identified as the origin of drawing errors (Chamberlain &

Wagemans, 2016) and it seems reasonable to infer that an improved facility to draw would be commensurate with improved observation. Examining if better drawing is a product of better observation would be an interesting area for future studies.

As improvements in drawing ability were self-reported, the results may only indicate that the students' perceived ability to draw had improved throughout the course. Nonetheless, with all students of the belief that their drawing skills had indeed improved, it implies that the life drawing module helped foster a sense of achievement in students. As a major symptom of burnout is a decreased sense of achievement (W. W. Ishak et al., 2009) this could be an additional positive effect of the module.

Improvement of Anatomical Skills

A wider aim of the course was to improve anatomical skills, through utilising anatomical terminology and concepts in a different context. 83% of students felt the course had enhanced their knowledge of anatomy whilst none felt it had been disadvantageous to their studies. Although no new anatomy was introduced, it did allow students to actively revise existing knowledge and apply it in a new context.

As suggested by previous authors (Phillips, 2000; Smith, 2010), life drawing is an opportunity for medics to step away from texts or the dissecting table and relate anatomy to a living person. Drawing the figure helps to avoid the 'trap of the textbook' – that tendency for students to think of the body as discrete chapters in a book rather than a unified whole (Smith, 2010). Feedback highlighted a positive reaction to the variety of models employed for the course, suggesting students found value in experiencing the diversity of the human form. A more diverse range of body types in future sessions may widen this experience.

SAM modules are designed to provide learning that is related, but largely separate, from traditional medical studies. Yet the most favourably received session was the one most closely aligned with their anatomical education: *écorché*.

'Écorché session with anatomy was really interesting'

'[I enjoyed] lessons on muscle drawing/écorché'

'The anatomical drawing is helpful revision!'

This session required students to utilise their drawing ability, observational skills and anatomical knowledge to produce an accurate representation of the underlying anatomy. Successful completion of an *écorché* forced students to contend not only with unfamiliar body shapes, but also unfamiliar poses that offered a true test of their anatomical understanding. The formation of an *écorché* also has clear parallels with the visual inspection of a patient (Campbell EW JR, 1990); students would identify surface landmarks to infer the position of other structures whilst being required to appreciate the range of morphologies encompassed within the bracket of 'normal anatomy'.

Wellness Benefits of the Module

Our results indicate that the students' response to the module was extremely positive, with all students agreeing to the statement that they had enjoyed the module. This finding is further supported by the increased demand for students electing to take this module and evidenced by the module attendance being significantly higher than was compulsory.

Furthermore, 96% of students felt that the course had provided a relaxing break from their studies. Offering relaxation from the pressures of the course is a key component of wellness interventions for medical students (de

Vibe et al., 2013; Dyrbye & Shanafelt, 2011; W. Ishak et al., 2013) and one that this module was able to provide. The relaxing nature of the module was regularly commented on in the open-ended questions:

'It's relaxing and helps me perform better in the evenings'

'I have really enjoyed...taking a break in the week'

One student even cited the benefit of 'forced relaxation' being added to their curriculum. This possibly implies that despite initial resistance to compulsory wellness interventions (W. Ishak et al., 2013), students may perceive value to self-care activities if obliged to undertake them.

A large impediment to introducing wellness programmes into medical curriculae is that many students may not see a benefit to the intervention prior to taking them. Ishak et al. (2013), proposed that these barriers could be overcome by creating courses that not only promote mental wellbeing, but also conferred other, more obviously beneficial skills. When asked prior to the first session why they had chosen the module, 91% of students indicated that they were keen to 'improve their drawing', with 59% hoping the course would 'improve their anatomy'. This suggests that the majority of students perceived the module as a chance to learn practical skills, or develop existing ones, and that the module had successfully avoided the stigma associated with stand-alone wellness interventions.

However it's worth noting that 91% of students hoped the module would be 'enjoyable'. On the one hand, this finding can be seen as a positive; expectation of, and openness to, the self-care aspects of an intervention can positively impact their efficacy (Dobkin & Hutchinson, 2013). But on the other hand, it implies the majority of students were cognisant of the need for self-care and anticipated a well-being benefit to taking the module. Despite other benefits being more actively promoted, the students selecting the module may not represent a hugely different demographic from those that would choose existing optional wellness interventions. Further studies may look to compare life drawing to traditional self-care programmes, in order to understand if student perceptions differ, as well as evaluating their relative efficacy.

Introducing Life Drawing into the Medical Curriculum

Justifying the introduction of humanities to a medical curriculum is not always straightforward (Ousager & Johannessen, 2010). Although frequently popular with students, difficulties persist in quantifying their benefits and students do not always perceive value to such modules (Shapiro et al., 2005). Much as with wellness interventions (W. Ishak et al., 2013), there can be a perception that time spent away from core medical training is time wasted.

It therefore seems promising that 87% of the students considered life drawing to be a worthwhile component of their medical training, despite reservations:

'The idea of SAM is unnecessary to me, but as we have to do it, I think this is the best one'

Meakin and Kirkin (Meakin & Kirklin, 2000) posed the question as to whether humanities courses make 'better doctors or just happier ones'. This seems to dismiss the idea that mental wellbeing can be a valid outcome of such courses. Future work is needed to quantitatively assess the observational, artistic and self-care benefits of the Life Drawing module, but student response suggests the module could have a positive impact in each of these areas. Certainly, when considering the provision of humanities to medical students, life drawing seems a strong candidate for inclusion.

A full, 10 session life drawing module may not be a feasible addition to every medical degree, so evaluating the benefit of individual components, such as the écorché session, may provide viable methods for integrating art into

the medical curriculum on a reduced scale. Developing smaller, more clinically relevant drawing sessions could even allow life drawing to become a compulsory supplement to anatomical teaching, in a similar manner to body painting (Finn & McLachlan, 2010) or medical illustration (Backhouse et al., 2017). A compulsory drawing element would dramatically widen the numbers of students exposed to the sessions and could see the wellness benefits of life drawing conferred beyond the scope of students who normally engage with self-care interventions.

Limitations

Limitations of our study include the small student numbers undertaking the course. This number represents 15% of the total year group, and ideally we would like to be able to report on the total cohort of students. This may also indicate that life drawing is a somewhat niche interest. Weisz & Albury (Weisz & Albury, 2010) reviewed the historical intersection between medicine and the arts. Although there are plenty of practitioners in either field that never cross the divide, there still exists a strong core of individuals with an interest in both – a finding they defined as the ‘medico-artistic phenomenon’. Although arts training may not be for every student, it seems an audience will persist for its provision within the medical curriculum.

As a student-selected module, it is reasonable to assume students choosing the module to might have a predisposition to favour arts-based training. That said, 50% of students said they had no artistic background, and only 9% had studied art beyond GCSE level. Whilst that certainly suggests a skew when compared to national uptake of Art GCSEs (Pareas, 2016), it doesn’t suggest an overwhelmingly art-centric group.

Although our results indicate that students felt their anatomical knowledge had improved, this was self-reported feedback and we have not looked at objective evidence of the students performing better in the anatomy assessments. Similarly, improvements in drawing were self-reported and may only reflect a perceived improvement. Future studies should look to quantitatively evaluate any impact on anatomical knowledge, artistic ability and mental wellbeing, with particular regard to previous interventions. There is also a need to assess whether placing a greater emphasis on practical skills retains, if not exceeds, the observational benefits found in prior studies using arts-theory as a teaching tool.

Conclusion

An SSC in Life Drawing could possibly offer a way to integrate arts training within the curriculum in a manner that provides practical, and clinically applicable, skills, but also confers the mental health benefits of standard wellness interventions. Students responded positively to the course and considered it a worthwhile addition to their medical training.

Take Home Messages

Notes On Contributors

Charlie James BSc (Hons) MSc is an anatomy demonstrator and medical illustrator at Norwich Medical School.

Sue O’Connor BSc (Hons) FHEA is a lecturer in Anatomy at Norwich Medical School with an interest in the application of art in anatomy teaching.

Dr Shobhana Nagraj BSc (Hons) MBBS MRCS MRCGP MPhil FHEA is a Lecturer in Medical Education at Norwich Medical School, a medical doctor by professional background, and an art enthusiast.

Acknowledgements

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Appendices

Declarations

The author has declared that there are no conflicts of interest.

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