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# **The Effects of Compassion-based Feedback on Wellbeing Ratings During a Professional Assessment Healthcare Task**

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## **Abstract**

### **Background**

There is a need for higher education policy to consider how student nurses might be supported, to help them to develop the resilience and mental wellbeing needed to cope with stressful environments. Reviews and qualitative research in this area suggest that compassion can improve wellbeing, however, compassion-based feedback is yet to be explored as a pedagogical intervention using quantitative methods.

### **Purpose**

To explore the effect of different feedback types on subjective wellbeing.

### **Methods**

In this experimental design, nursing students were presented with three feedback types, '*compassion-based feedback, simple descriptive feedback, and utilitarian feedback*' and were asked to provide post-trial ratings of subjective wellbeing, in relation to each type, whilst undertaking a nursing-related task. Participants also rated the helpfulness of 'Type of Feedback'.

### **Results**

We report a significant difference of 'Type of Feedback' with higher ratings of wellbeing when participants were presented with compassion-based feedback.

### **Conclusion**

Compassion-based feedback could lead to higher wellbeing in educational tasks related to nursing.

## Introduction

The increased prevalence of mental health difficulties in university students has become an important topic for higher education policy makers (Brown, 2016, Office of National Statistics [ONS], 2018). Health Education England (HEE) plan to establish a supportive and compassionate-based healthcare culture for healthcare learners, and NHS staff (HEE, 2019). Their aim being to enhance the wellbeing of these populations. This is important considering that those who work in health-related professions commonly experience high levels of stress, burnout and absenteeism (Chambers & Ryder, 2018, NHS, 2019). However, providing increased support for healthcare students poses a significant challenge for large organisations like the NHS and higher education providers. It is pertinent therefore, to enquire how this might be achieved.

Providing support is necessary for building emotional resilience, which is required to cope with the demands of nurse education and practice (Brown, 2016). However, over a third of students across various health-related courses<sup>1</sup> fail to complete their studies; workload, stress and financial and personal reasons being cited as the main causes of attrition (HEE, 2019). Nursing students spend 50 percent of their time in clinical practice placements; inevitably they are exposed to high levels of human distress, a recognised cause of vicarious trauma (Machado, 2018). Distress is, no doubt, exacerbated due to undertaking clinical placements during a global pandemic (Adams & Wallis, 2020, Shaw, 2020).

Strategies must be developed with the potential to improve wellbeing, during the higher education experience. HEE's (2019) plan, however, does not account for the continued international reporting of workplace incivility in healthcare teams that could potentially impact directly on students placed within such teams (Bambi, Foà, De Felippis et al., 2018). Therefore, the quality of social interactions within clinical teams must also be considered, as this can

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<sup>1</sup> Health-related courses can be defined by a range of degree pathways, for example BSc, and MSc Graduate Entry programmes. In this study the participants were postgraduate nursing students.

directly influence the mental health and wellbeing of individuals working in teams (Arnetz, Fitzpatrick, Cotton & Jodoin, 2019). The impact of any negative social interactions on students could be moderated through the support, and guidance received within universities. Those concerned with the education of healthcare students have an important role to play in helping students to navigate political and cultural dynamics across different clinical placement areas (Crawford, Brown, Kvangarsnes & Gilbert, 2014). Students' experiences are known to be improved by the provision of well-designed feedback, which can positively influence attainment, personal and academic development, motivation, and self-esteem (Dweck, 1999, 2002).

### **Background**

A global movement on compassion has recognised the potential for compassion-based interventions in several sectors, including business, healthcare, science, research, and education (*see* Charter for Compassion, <http://charterforcompassion.org/>). Compassion has been defined as “a sensitivity to suffering in self and others with a commitment to try to alleviate and prevent it” (Gilbert, 2014, p.19). Compassion involves acknowledgment that all humans go through difficult experiences and that those experiences can be responded to with kindness and caring action (Neff, 2011, Gilbert, 2014, Strauss et al., 2016). Evidence suggests that the receiving of compassion has a positive effect on stress reduction, can increase resilience, and improve wellbeing (Hermanto, Zuroff, Kopala-Sibley et al., 2016, Bluth & Neff, 2018, McClelland, Gabriel & DePuccio, 2018). Although, studies have suggested that some individuals are averse, or fearful of receiving compassion (*see* Gilbert, McEwan, Matos & Ravis, 2011). Compassion may therefore be perceived as a sign of weakness and be actively resisted.

Given that nurses are the largest patient interacting profession, there is a need to explore potential solutions to help maintain staff wellbeing and avoid future burnout (Ching, Cheung, Hegney & Rees, 2020). Higher education is central to the early development of practices which

will ensure the future of high quality, effective and safe patient care; compassion being central to this (Stacey, Cook, Aubeeluck, Stranks et al., 2020, Health Education England, 2019). However, research on the giving and receiving of compassion is relatively new in relation to the potential effect it can have on wellbeing (Leaviss & Uttley, 2015). This justifies our choice to examine whether compassion-based feedback, in an educational context, can positively impact individual subjective perceptions of wellbeing.

The current study employed Frederickson's (1998) Broaden and Build theory, which proposes that receiving feedback grounded in compassion could have a positive impact on wellbeing. This model suggests that compassion-based feedback will induce positive emotions, widening the array of human thoughts and actions (Fredrickson, 2001). This is said to foster the factors that lead to human flourishing (Seligman & Csikszentmihalyi, 2014). Likewise, previous research evidence has indicated that high levels of subjective wellbeing are associated with the experiencing of positive emotions and positive outcomes in several areas of life (Lyubomirsky, King & Diener, 2005, Pressman & Cohen, 2005, Cohn, Fredrickson, Brown et al., 2009, Thumm & Flynn, 2018). Boosting positive emotions is particularly important when applied to those training to become healthcare professionals, as an improved sense of wellbeing could help increase the desire to maintain future healthcare practices rooted in compassion (Chambers & Ryder, 2018).

Frederickson (1998) proposes that positive emotions elicit wellbeing by increasing positive affect<sup>2</sup>, which in turn leads to a sustained desire to continue to help others. Similarly, Gilbert (2013) describes three emotional regulatory systems '*threat, drive, and affiliative*'; each with a different affective function. Gilbert (2009, 2013) asserts that receiving compassion 'tones up' the affiliative system, evoking feelings of contentment. This reinforces the notion

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<sup>2</sup> Affect is defined within this study from a psychological perspective, as a concept used to describe the experience of a feeling or an emotion (Pressman & Cohen, 2005).

that receiving compassion can increase positive affect<sup>2</sup> and improve wellbeing. However, other on-topic researchers maintain that affect and affect regulation relates to just one dimension of overall health and wellbeing (Warr, 2011). Furthermore, studies suggest age related differences in affective responses and that young adults have increased emotional reactivity (Wieser, Mühlberger, Kenntner-Mabiala & Pauli, 2006, Kliegel, Jäger & Phillips, 2007)

Research evidence has continued to support the view that receiving compassion-based interventions can have a positive effect on wellbeing (Gu, Stauss, Bond & Cavanagh, 2015, Gilbert, 2009, Kirby, 2017, Kirby, Tellegen & Stendl, 2017). Hitherto, the effect of receiving of '*compassion-based feedback*' as a pedagogical intervention to enhance wellbeing has not been empirically examined.

Feedback is provided to healthcare learners as an evaluation of individual academic performance, and within clinical placements as a measure of developing competencies (Helminen, Johnson, Isoaho, Turunen et al., 2017). It is recommended that feedback be thought of as a social process which is important for understanding wellbeing within any group (Adcroft, 2011). Accordingly, consideration should be given to the nature of feedback in the context of healthcare education and how distinct feedback 'types' may have discretely different effects on student wellbeing. However, as noted by (Bond, 2014) previous research has not sufficiently explored the psychological impact of feedback types on wellbeing.

From an educational perspective, feedback is broadly regarded as important in the development and enhancement of learning (Orrell, 2006). Previous research concerning learning in healthcare has suggested some contentious findings regarding a negative association between the quality of provided feedback and wellbeing in nurses (Giesbers, Schouteten, Poutsma et al., 2015). However, it is unclear in these studies whether the quality of feedback related to task-performance (Whitaker & Levy, 2012) or whether feedback was evaluated with

respect to the emotional communication underpinning the moral and professional code of conduct in nursing (Banks, 2012).

Healthcare learners are provided with feedback at university and within clinical placements, as both an evaluation of individual academic performance and a measure of developing competencies (Helminen et al., 2017). It is suggested that when university students receive compassion, it can buffer the effects of self-criticism (Hermanto et al., 2016). Moreover, receiving compassion has been positively associated with the wellbeing in nursing trainees and professionals (McClelland et al., 2018). However, nursing students are considered characteristically ‘Gritty’<sup>3</sup> (Duckworth, Peterson, Matthews & Kelly, 2007), meaning they are driven to achieve their goals through passion, conscientiousness, and determination. This drive to realise goals may be the result of high levels of motivation and high self-efficacy in nursing students (Scholz, Dona, Sud & Schwarzer, 2002, Albagawi, Hussein, Alotaibi, Albougami et al., 2019, for a contemporary examination of grit and nursing students’ academic and clinical performance *see* Terry & Peck, 2020). Thus, feedback that is based on compassion may not necessarily prove useful or influence the motivation of this population.

Research that focuses on student’s interpretations, and perceptions of feedback, is limited. Only a small number of studies have paid attention to the emotional and psychological aspects that underpin the receiving of feedback (Bond, 2014). Hence, there is a paucity of evidence which highlights the importance of attending to students’ experiences, and the emotions related to those experiences, in higher education. The aim of the current study was to address this gap by exploring the impact of different feedback types on subjective wellbeing. This could develop an understanding of the functions of feedback styles as both a cognitive and a social process (Adcroft, 2011), thereby, addressing student performance and wellbeing.

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<sup>3</sup> Grit is defined as a non-cognitive personality trait associated with the motivation and determination to achieve long term goals (Stoffel & Cain, 2018).



## **Purpose**

To explore whether compassion-based feedback can lead to higher ratings for subjectively defined wellbeing, when compared to descriptive and utilitarian types of feedback. We also explored the helpfulness of compassion-based feedback for healthcare learners in completing an educational task. Finally, as exploratory objectives we assessed whether emotional reactivity and age, that have been shown in previous studies to impact sensitivity and responsivity to receiving compassion, had an effect on the responses of the participants.

## **Ethical Considerations**

Ethical approval was acquired from the University of Nottingham (Ref: 211-1903). Written consent was obtained from each participant prior to taking part in the study. Participants were also informed of their right to withdraw at any time without punitive actions and that their information would be kept confidential and anonymous.

## **Methods**

### **Design**

A repeated-measures experimental design.

### **Participants**

A power calculation based on medium effect sizes ( $f = .25$ ) was performed (*see* Field, p.474, for recommended levels of  $n^2_p$ ). The result revealed that twenty-four participants would be required to achieve a power of  $P_{(1-\beta)} = .8$  (Faul, Erdfelder, Lang & Buchner, 2007) The value for alpha was set at  $p \leq 0.05$ .

The study was advertised to postgraduate (MA, MSc and PhD) nursing students during the student year 2018-2019. Twenty-four (seven males) out of a total of thirty-one postgraduate nursing students studying in the university of Nottingham during the student year 2018-2019 volunteered to participate in the study. The mean age was 28.87 (S.D. = 6.72).

## **Data collection**

### **Pre-screening**

We chose to screen participants for depression using the Patient Health Questionnaire 9 (PHQ-9) (Spitzer, 1999), as depression and associated symptoms such as anhedonia could potentially skew the experience of positive emotional communication. PHQ-9 is widely used to assess symptoms of depression and is highly reliable (Cronbach's  $\alpha$  .89); found to be consistently accurate across a range of groups (Levis, Benedetti & Thombs, 2019). Each of the 9 DSM-IV criteria is scored as “0” (not at all) to “3” (nearly every day).

Participants were screened for GRIT as this may indicate a likelihood to persevere towards long terms goals regardless of the feedback type received, and/or any positive/negative effect of this. We chose the GRIT short scale as this has the best overall predictive validity (Cronbach's  $A = .85$ ) (Duckworth & Quinn, 2009). Scores are between 1 (not at all gritty) and 5 (extremely gritty).

The relationship between job stress, burnout, and self-efficacy has previously been examined more comprehensively as a predictor of quality of life and wellbeing (Schwarzer & Jerusalem, 1995), with higher levels of general self-efficacy (GSE) being associated with lower stress (Morton et al., *in* Denovan & Macaskill, 2017). The GSE scale was used to assess optimistic self-beliefs to cope with various difficult life demands. This is a 10-item self-reported psychometric (Cronbach's  $\alpha$  .76 - .90). The mean international level of GSE has been found to be 29.55 (Scholz, Dona, Sud & Schwarzer, 2002)

It was necessary to identify individuals with alexithymia traits as this would have the potential to negatively affect participant's ability to interact with the feedback provided. The core characteristics of alexithymia are marked dysfunction in emotional awareness, social attachment, and interpersonal relating (Han, Mei & Sun, 2018). Screening was performed using

an online 20-item self-report version (Psymed, 2019). This version contained 12 questions: maximum score = 60. Scores above 22 were indicative of alexithymia traits.

### **Engagement task design**

A short medical calculations test, publicly available online and openly source, was used to create the engagement task (Nursing Link, 2019). Compassion-based feedback was created using the compassion satisfaction component of the ProQoL scale. Examples of compassion-based feedback were “you will get satisfaction from being able to help people” and “you should feel proud of what you can do to help people” (for a detailed description of the included compassion-related response items, see Stamm, 2010). Permission to adapt the scale was granted from the author (Stamm, 2010). Simple descriptive feedback informed the participant whether they had answered the question successfully i.e. ‘you answered this correctly, please press space to continue’. Utilitarian feedback was considered useful in relation to goal-orientation (future healthcare practice) i.e. ‘to improve you might consider the time needed to calculate dosages’ (Black & Williams, 1998).

The presentation was programmed in the coder and builder components of Psychopy version 1.85.3 (Peirce, 2007). The text used for the engagement task was a clearly visible, in black standard font (Times New Roman) against a white background, with a clearly visible font size (pt. 28). The code for the experiment was written to ensure that participants were not able to hit any miss-keys during the task. The only way to exit the programme, once running, was via the escape button. At the end of the engagement task, a screen was presented informing participants that the experiment was completed.

### **Engagement task procedure**

The engagement task began with a five-minute training stage, by the end of this stage participants were asked whether they were ready to begin the experiment. During the training stage the participants were instructed on how to respond to the computer-based experimental

task. Participants were also made aware that they will give feedback on how helpful and how much each post-trial feedback influenced their wellbeing. The participants were asked to reply to these questions “subjectively, freely and on their own terms” as regards their experience in each post-trial question (Dienes, 2009). All participants responded positively. Twelve questions were presented, with participants being measured a total of four times in each feedback condition with order of feedback condition randomised. At the end of each question participants were asked (from an on-screen message) to rate how well they felt in relation to the feedback provided. Participants were prompted to record their response from one (not very well) to ten (very well) using the mouse on a line presented on the screen in a Likert-type scale. At the end of each question participants were also asked to evaluate each feedback type, in terms of how helpful they thought the feedback was in relation to successfully completing the task. Participants were prompted to record their response from one (not very helpful) to ten (very helpful). The order of the two engagement tasks was randomized in each trial. After the experiment, participants were asked to complete the ‘fear of compassion from others’ element of the Compassion Evaluation Scale (Gilbert, McEwan, Catarino & Baião, 2014) and the Emotional Reactivity Scale (ERS) (Preece, 2019).

### **Post-screening**

We used the Emotional Reactivity Scale (ERS) to measure the “ease of *activation*, *intensity*, and *duration* of an individual’s emotional responses”, (Cronbach's  $\alpha$  .89) (Becerra, Preece, Campitelli & Scott-Pillow, 2017, p.867). Participants rated responses on a Likert scale from 0 (not like me at all) to 2 (somewhat like me) through to 4 (completely like me).

We chose a subscale of the compassion evaluation scale to evaluate how people respond to receiving compassion (Gilbert et al., 2011). The subscale ‘responding to compassion from others’ consists of 13-items and is used to measure the fear of compassion from others. Items are rated on a five-point Likert scale (0 = Don’t agree at all, 4 = Completely agree), (Cronbach's

$\alpha$ .87) (Gilbert et al., 2011). This was provided to participants after the engagement task so that there was no contamination between this and the experimental condition of compassion.

### **Exclusion criteria**

Exclusion criteria were Alexithymic traits and having a current diagnosis for a mental-health disorder via self-report. Data from participants with scores  $\geq 9$  on the PHQ-9 would be excluded from the analysis; also, participants with scores  $\geq 22$  on the Alexithymia test that indicated possible Alexithymic traits, would also be excluded from the analysis. No participants were excluded based on these assessments.

### **Statistical Analysis & Results**

To explore whether compassion-based feedback was rated higher for wellbeing during the professional assessment task, a repeated measures ANOVA was run, using SPSS Statistics for Windows, version 25.0, (BM Corp, 2017) with independent variable ‘Type of Feedback’ (Compassion vs Utilitarian vs Descriptive) and dependent variable ‘Wellbeing Ratings’ ( $\alpha$  set at  $p \leq 0.05$ ). The analysis revealed a significant effect of ‘Type of Feedback’ ( $F(2, 46) = 16.66$ ;  $p < .001$ ;  $\eta^2_p = .45$ ). Further Bonferonni corrected pairwise comparisons revealed that participants rated subjective wellbeing higher ( $M. = 7.8$ ,  $S.D. = 1.18$ ) when exposed to ‘compassion-based feedback’, than when exposed to ‘utilitarian feedback’ ( $M. = 6.12$ ,  $S.D. = 1.08$ ;  $p < .001$ ;  $d = 1.46$ ) and ‘descriptive feedback’ ( $M. = 6.17$ ,  $S.D. = 1.67$ ;  $p < .001$ ;  $d = 1.13$ ). See Figure 1. These results suggest that participants experienced compassion-based feedback as a more positive feedback style compared to its alternatives. These results indicate that compassion-based feedback can improve wellbeing.

To explore whether compassion-based feedback was rated higher for efficiency in successfully finishing the task with higher outcome scores during the professional assessment task, a repeated measures ANOVA was run with independent variable ‘Type of Feedback’ (Compassion vs Utilitarian vs Descriptive) and dependent variable ‘Helpfulness Ratings’. The

analysis revealed an effect of ‘Type of Feedback’ ( $F(2, 46) = 2.59$ ;  $p = .086$ ). This trend was not statistically significant. The analysis also revealed a large effect size ( $\eta^2_p = .45$ ) of ‘Type of Feedback’. Further Bonferonni corrected pairwise comparisons revealed a trend which showed that participants rated compassion-based feedback ( $M. = 7.07$ ,  $S.D. = 1.29$ ) higher for helpfulness than ‘utilitarian feedback’ ( $M. = 6.24$ ,  $S.D. = 1.16$ ;  $p = .039$ ;  $d = .68$ ) and ‘descriptive feedback’ ( $M. = 6.31$ ,  $S.D. = 1.31$ ;  $p = .091$ ;  $d = .58$ ) (See Figure 1.). These results suggest that participants may have found compassion-based feedback more helpful on a personal level although, it is possible that the compassion-based feedback did not contribute to higher ability to complete the professional task with higher success. No other comparisons were significant for wellbeing ratings and ratings for helpfulness during the analysis.

Figure 1: Wellbeing and Helpfulness Ratings per Feedback Style

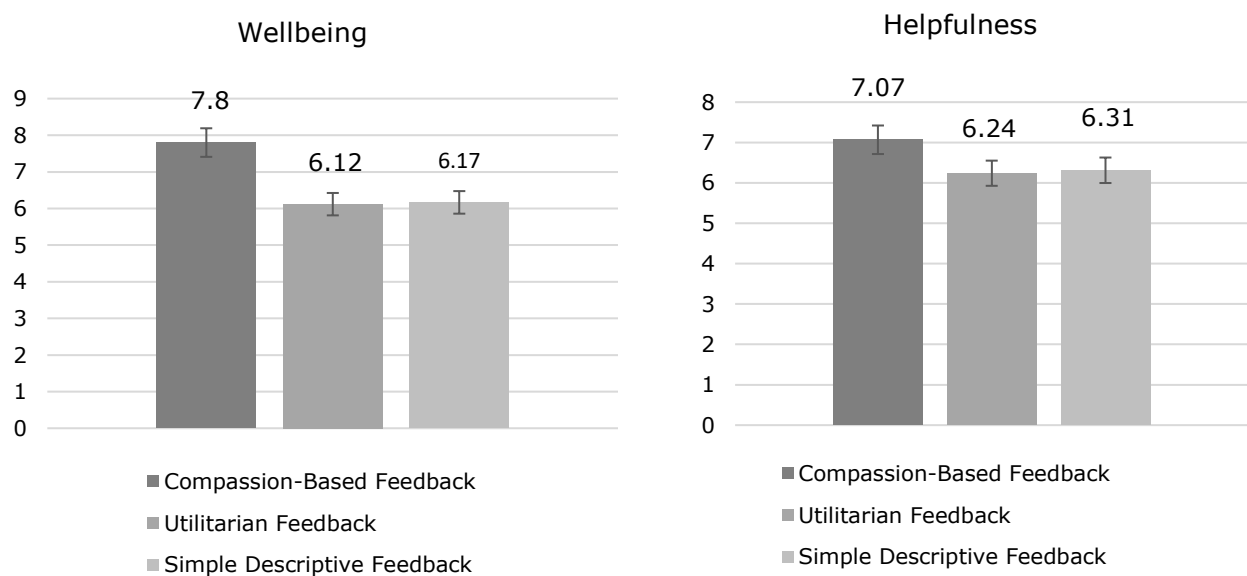


Figure 1: Compassion-based feedback was rated significantly higher for wellbeing compared to Utilitarian and Simple Descriptive Feedback. Trends regarding Compassion-based Feedback were found, revealing it to have a higher level of Helpfulness in comparison to its alternatives.

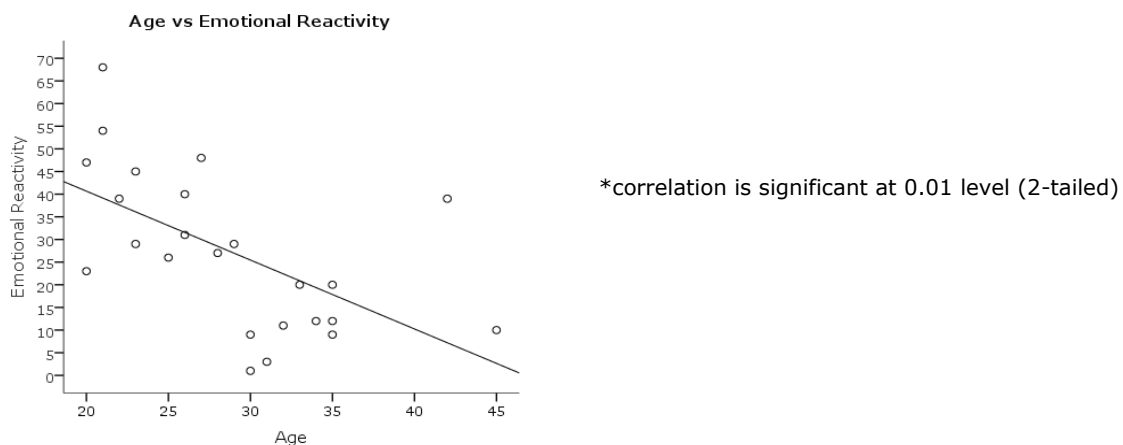
## GRIT & GSE

To explore levels of GRIT within the current sample of participants, mean scores were calculated. The results revealed that the participants, on average, rated themselves high on GRIT ( $M. = 3.5$ ,  $S.D. = .60$ ). This result suggests that participants were conscientious and persevered towards long-term goals. Levels of GSE were also calculated. The results revealed that the participants, on average, rated themselves high on GSE ( $M. = 30.9$ ,  $S.D. = 3.79$ ). Range = 23-36.

## Additional Statistical Analysis & Results

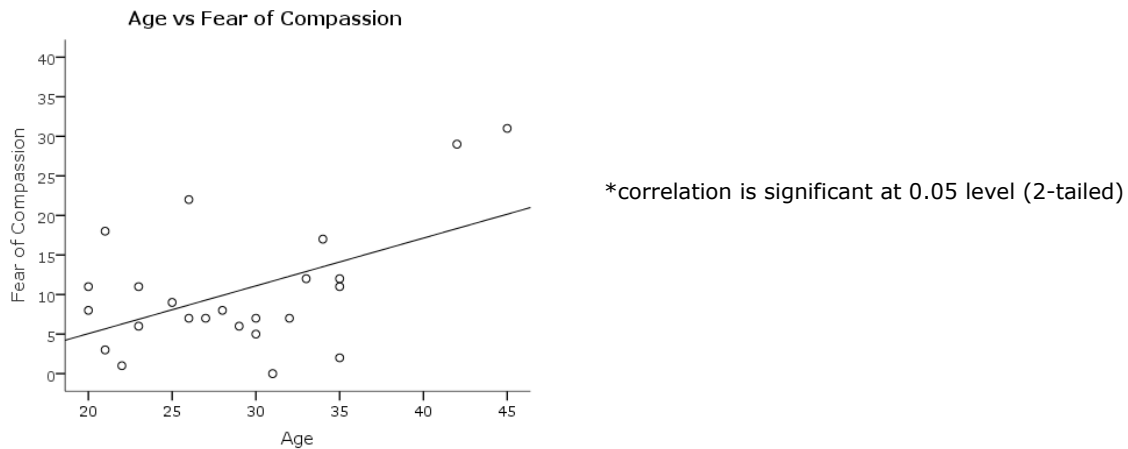
A Pearson correlation coefficient was computed to assess whether a relationship exists between age and emotional reactivity ( $M. = 27.17$ ,  $S.D. = 17.53$ ). There was a significant correlation between the two variables ( $r = -.58$ ,  $n = 24$ ,  $p = .003$ ). The results are summarised in the scatterplot (See Figure 2.).

Figure 2: Correlation between age and emotional reactivity



A Pearson correlation coefficient was computed to assess the relationship between age and fear of compassion. There was a significant correlation between the two variables ( $r = .5$ ,  $n = 24$ ,  $p = .011$ ). The results are summarised in the scatterplot (See Figure 3.).

Figure 3: \*Correlation between age and fear of compassion



Overall, the results of these analyses indicate a strong, negative relationship between age and emotional reactivity and a strong positive relationship between age and fear of compassion. An increase in age is correlated with a decrease in emotional reactivity score and an increase in fear of compassion.

### **Discussion**

Previous evidence has established that receiving compassion can improve wellbeing. For example, compassion buffers the effects of self-criticism in university students (Hermanto et al., 2016). The experience of compassion has been examined in a range of populations and found to be related to positive health outcomes (Bluth & Neff, 2018). Receiving compassion has also been positively associated with the wellbeing of nurses (McClelland et al., 2018). However, a review of the literature for the current study yielded no results regarding the question of feedback in the form of compassion or whether this might be useful for wellbeing, in the context of higher education. These are important questions to explore given the recent increase in levels of mental health difficulties in university students (ONS, 2018).

Theoretically, the current study proposed that compassion-based feedback can induce positive emotions, thereby improving subjective wellbeing (Fredrickson, 2001). We found a



significant difference of 'Type of Feedback' ( $p < .001$ ) with a large effect size ( $\eta^2_p = .45$ ). Participants' rated their wellbeing higher when experiencing compassion-based feedback. These results indicate that participants experienced compassion-based feedback much more positively than the other feedback styles. Our results also broadly support the work of other studies in this area that have linked compassion with improved wellbeing, such as the abovementioned examples (Hermanto et al., 2016, Bluth & Neff, 2018, McClelland et al., 2018). Differences in subjective wellbeing ratings may be explained in part by the emotional processing of feedback and the function of positive emotions to induce positive affect (Frederickson, 1998). However, affective states are complex and may be influenced by a range of factors that may not have been controlled for in this study. For example, there may be biological, social, and situational factors that can influence affective states. Thus, a more holistic view of psychophysiological constructs, in the context of the person's life, would need to be established for a deeper understanding of possible moderating or mediating factors (Harmon-Jones, Gable & Price, 2013). Alternatively, it may be that participants benefitted from receiving compassion-based feedback due to differences in emotional reactivity. Participants may differ in relation to affective responses (and the intensity of negative and positive emotional responses) when exposed to emotion inducing stimuli (Storbeck, Davidson, Dahl, Blass et al., 2015).

Our additional analysis found a significant, negative correlation between age and emotional reactivity. As age increased, emotional reactivity decreased. We also found a positive correlation between age and fear of compassion. As age increased the fear of compassion also increased. This demonstrated that there were differences, in relation to affective responses, in the participants who took part in this study. The participants were predominantly female with a mean age of 28.87 (S.D. = 6.72). This could indicate that females aged in their mid-late twenties are more receptive to compassion-based feedback, and that the

experiencing of positive emotions is felt with greater intensity. However, further research could benefit from a dedicated exploration of effects of feedback styles in a predominantly male population sample.

Increased ratings of wellbeing when exposed to compassion-based feedback might be a result of stimulation of the affiliative neural systems, leading to increased feelings of contentment (Gilbert, 2009). However, wellbeing is considered multidimensional. Therefore, the results of the current study should be interpreted as addressing the social-emotional aspects of the impact of compassion-based feedback. It is possible that additional mechanisms (such as the biological and situational effects on affective states) could be associated with subjective wellbeing (McGaghie, Mytko, Brown & Cameron, 2002).

Results revealed that participants had levels of general self-efficacy (GSE), above the documented international average (Scholz et al., 2002). High levels of GSE may have enabled participants to perform well, irrespective of feedback type received. Participants were also noted to have rated themselves as gritty (Duckworth et al., 2007). It is suggested that individuals with high grit possess adequate levels of passion, perseverance, and strength of character to achieve long-term goals, irrespective of any setbacks (Ivcevic & Brackett, 2014). Moreover, individual perceptions of academic ability and clinical performance have been noted to have a strong association with grit (Terry & Peck, 2020). In the context of the current study, this means that nursing students are generally motivated to achieve long-term goals.

In terms of helpfulness ratings, a trend was observed in the current study, in which participants rated the helpfulness of compassion-based feedback more positively than other types of feedback, although, a statistically significant difference was not observed ( $p = .091$ ). However, the absence of a statistically significant difference between the three 'Types of Feedback' does not mean that the three types are equivalent in terms of helpfulness (*see also* Dienes, 2016). Participants may have found compassion-based feedback more helpful on a

personal level although, it is possible that the compassion-based feedback did not contribute to higher ability to complete the professional task with higher success. It could be contended that the type of task undertaken in this study (medical calculations) may have been anxiety-provoking for those with a lesser propensity towards mathematics and furthermore, in very simple terms, that compassion feedback does not improve the mathematical competency of a participant.

Our findings have raised intriguing questions regarding the nature of feedback and the impact of different types of feedback on subjective wellbeing. We suggest that, in accordance with Adcroft (2011), feedback should be understood as a socio-cognitive process, rather than a purely cognitive one. Previous evidence has indicated that high levels of subjective wellbeing are associated with the experiencing of positive emotions, related to positive outcomes in several areas of life (Lyubomirsky et al., 2005, Pressman & Cohen, 2005, Cohn et al., 2009, Thumm & Flynn, 2018). The results observed in the current study support the idea that compassion-based feedback may indeed induce positive emotions and, as a result, compassion-based feedback may have the potential to improve wellbeing for nursing students.

It must be noted that relevant research has provided extensive evidence for the “happy-worker-productive-worker” thesis (Wright & Cropanzano, 2000). The “happy-worker-productive-worker” thesis suggests that individuals who receive positive feedback and score high in perceived wellbeing will be more productive in their professional performance (Claessens, Van Eerde, Rutte, & Roe, 2007). In the current study, we do not *per se* support an increase in performance due to positive or compassion-based feedback (Nielsen, Nielsen, Ogbonnaya, Käsälä, et al., 2017) because several factors have been suggested to moderate this relationship. For example, the “Demands and Responses model” (Demerouti, Bakker, Nachreiner, & Schaufeli, 2001), proposes that the professional task must be individually

feasible to undertake, and the “IGLOO<sup>4</sup>” model suggests that harmonious interaction between different members of a team are required for mediating the relationship between wellbeing and increased professional performance.

We suggest a reverse effect, as regards performance and wellbeing, with emphasis on wellbeing. We propose that compassion-based feedback has an effect on wellbeing which has been highlighted as – and should ethically be (Cohen & Pressman, 2006) – an antecedent of feedback interactions. A brief mention to the advantages of wellbeing, in and of itself (according to previous research), is to promote a decrease in instances and the severity of mental health problems, support return to work after experiencing work-related stress (Nielsen, Yarker, Munir & Bültmann, 2018), and promote work engagement (Schaufeli, Taris & Van Rhenen, 2008). Along these lines, prior research has emphatically stressed for the past four decades that feedback-induced wellbeing should be an objective of humane and ethical professional settings, irrespective of its impact on work performance. Taking into account the current crisis in nursing, with large vacancy gaps, difficulty in retaining staff, and pervasive effects of the current pandemic on mental health and wellbeing (Holmes, O’Connor, Perry, & Tracey et al., 2020), the latter should be an objective in and of itself before – or even without, at this critical point during the current global crisis – we enter further discourse as to whether feedback-induced wellbeing can lead to further advantages (Warr, Cook & Wall, 1979, Griffin, 1986, Diener, Suh & Oishi, 1997, Warr, 2011, Van den Broeck, Lens, De Witte & Van Coillie, 2013, Di Fabio, 2017, Shaw, 2020).

### **Strengths and Limitations**

In the current study the nuances involved in interpersonal communication such as warmth and charisma were not tested due to the implementation of the design using coding and computer presentation. However, this could also signify that the way in which the feedback was delivered

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<sup>4</sup> Individual, group, leader, and organisational co-operation.

was standardised across all participants. Removing the human element from this study could be helpful in reducing interpretation bias in the design. Having feedback in a written format allowed participants more time to process the information, consider their answers, and evaluate the feedback presented to them. The randomisation of feedback within the programming of the experiment is a strength of the design, which resolved any effect of conditioning, or in psychological terms, the role of expectancy in human learning and performance (Schachtman & Reilly, 2011).

Other factors may have influenced participants' subjective wellbeing. Without speaking to participants, it is not possible to identify (or obtain a deeper understanding of) other factors participants might attribute to the experience of wellbeing; or indeed what optimal wellbeing means to them. It would have been beneficial to follow up with participant interviews, to gain insight into what participants felt and how they perceived compassion. This would also help ascertain which feedback was perceived to be more helpful and why this was the case.

Data were acquired from student nurses, who constitute a very small part of a much larger system. The NHS is an extensive and complex environment, spread throughout the UK. It is therefore difficult to assess the transferability of these results from a student population to healthcare professionals, employed within the NHS.

## **Conclusion**

Compassion-based feedback has the potential to improve subjective wellbeing in a group of healthcare learners, in the context of undertaking a professional healthcare-related task. The results of this study contribute to contemporary knowledge regarding the feedback process and the potential impact of these processes on wellbeing. Our results also provide a new understanding of feedback and how this can, when underpinned by compassionate messages, positively impact wellbeing. These findings have implications for improving the way in which feedback is designed and delivered, specifically to individuals who are training

to become healthcare professionals. This study has provided a platform for the feasibility of compassion-based feedback, which could help to promote the development of resilience-based competencies and support student nurses in transition to practice. However, this is limited by the lack of attention to cultural diversity and how cultural differences might affect how compassion-based feedback is processed emotionally. Further research should focus on determining whether compassion-based feedback has a similar effect cross-culturally.

Code, raw data and supplementary material for the current manuscript have been made open access and can be found at <https://osf.io/rvbcp/>.

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