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**Training Health Professionals to Support Patients with Appearance-Affecting Conditions**DOI: 10.47368/ejhc.2023.304  
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CC BY 4.0**A Pan-European Evaluation of an Acceptance and Commitment Therapy Approach to Patient Communication****Fabio Zucchelli** 

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## Abstract

Multidisciplinary health professionals (HPs) are involved in supporting patients who have conditions that affect their appearance. With appearance-associated distress common in this group, acceptance and commitment therapy (ACT) and enhanced communication skills both show effectiveness in helping patients adjust to their conditions. Multidisciplinary HPs are perfectly placed to provide low-level psychological support as paraprofessionals. We present the real-world evaluation of a training programme, ACT Now, which was delivered via the train-the-trainer model to 149 multidisciplinary HPs in six European countries. Trainees completed a 16-item knowledge, attitude and practice survey covering psychoeducation on appearance concerns, ACT applied to the patient group and communication skills, at pre-training, post-training and at 3-or-6-month follow-up. Findings show that trainees' confidence consistently improved in understanding specific facets of appearance concerns and ACT processes, with largely positive changes in other facets, skewed towards delivery nations in which psychologists delivered the training. Patient communication skills generally improved, though again these were more pronounced in psychologist-led countries. However, an absence of significant improvements in ACT comprehension suggests a challenge in transmitting the ACT model to HPs. Providing more initial training to non-psychologist trainers and embedding post-training skills practice for trainees may help reinforce the ACT component of the training.

## Keywords

Psychoeducation, patient-provider interaction, acceptance and commitment therapy, body image.

Physical appearance can be affected by many health conditions, spanning multiple health services and professional disciplines. Congenital anomalies that result in a visible difference, such as cleft lip and/or palate, often require multidisciplinary intervention across surgery, dentistry and speech therapy. Other causes can alter patients' appearance later in life, sustained via injury (e.g., scarring from burns, limb loss from accidents), disease (e.g., skin conditions) or from medical treatment (e.g., cancer surgery). Approximately 10 million people are estimated to have an appearance-affecting condition across Europe (Harcourt et al., 2018). Alongside the direct medical and functional outcomes of such conditions, affected patients

across Europe commonly encounter psychosocial difficulties in adjusting to a different appearance within an appearance-focused society. These are predominantly in the form of appearance-focused social anxiety and low mood, collectively referred to as appearance concerns (e.g., Dalgard et al., 2015; Hotton et al., 2020; Toussi et al., 2021)

With patient access to trained mental health practitioners limited even in high-income European nations (World Health Organization, 2022), the health professionals (HPs) routinely involved in affected patients' care are well placed to offer psychological support. HPs' value is incorporated into stepped care models of psychological intervention, in which the most practicable evidence-based support is provided to patients first, and this is only stepped up to more specialist support where indicated (Johnson et al., 2015). While unable to replace specialist mental health professionals, this approach emphasises the role all HPs can play in communicating with compassion, being able to explore patients' psychosocial concerns with them, and offering basic approaches to help patients cope with low mood and anxiety (Jenkinson, 2012; Johnson et al., 2015).

However, pan-European research shows that multidisciplinary HPs working with individuals who have appearance concerns lack the knowledge about the specific challenges encountered by patients with appearance-affecting conditions, and are not confident in communicating with patients about these challenges (Williamson et al., 2018). Patients share these concerns about professionals' knowledge and communication (in burns services in Dahl et al., 2012; and in head and neck cancer care in Konradsen et al., 2009). Most of the same HPs surveyed in Williamson et al. (2018) also expressed interest in receiving training on supporting patients with appearance concerns.

To optimise its potential, such training should be founded on evidence-based approaches to psychological intervention and communication (Levinson et al., 2010). Acceptance and commitment therapy (ACT) is one evidence-based approach to psychological intervention, in which psychological flexibility, namely being open and aware of one's internal experiences and living in line with personal values, is targeted as a process of behavioural change (Hayes et al., 1999). ACT holds burgeoning evidence in improving self-management of long-term conditions (Graham et al., 2016), body dissatisfaction (Griffiths et al., 2018), social anxiety and depression (Gloster et al., 2020). In practice, a third of psychosocial clinicians who support patients with appearance-affecting conditions across 15 European countries report using ACT to help these patients (Harcourt et al., 2018).

As a transdiagnostic approach to mental health, ACT is also suited to addressing the range of psychosocial challenges faced by affected patients (Gloster et al., 2020). ACT has been shown to confer simultaneous improvements across mental health outcomes in a single intervention for patients with long-term health conditions (Brassington et al., 2016). Its focus on process (i.e., psychological flexibility), rather than condition-specific treatment protocols as in most forms of cognitive behavioural therapy (CBT), also makes ACT particularly well suited to scaling up evidence-based psychological support at a low level. ACT offers relatively straightforward methods for cultivating psychological flexibility, which can be taught to paraprofessionals (those involved in patients' care without psychological training) to provide low-level psychological intervention (Arnold et al., 2022; Hofmann & Hayes, 2019). Evidence exists for the effectiveness of brief ACT-based training courses for paraprofessionals to deliver care to patients (e.g., in chronic pain services; Trompetter et al., 2014; and in substance misuse services; Varra et al., 2008). No ACT-based training for HPs working with patients who have appearance-affecting conditions exist to date. As exemplified by Trompetter et al. (2014) and

Varra et al. (2008), it is vital to the acceptability of ACT training programmes that the content is tailored to the specific contextual challenges facing both the patient group and the HPs with whom they work (Trompetter et al., 2014). Interventions that target domain-specific psychological flexibility (e.g., accepting thoughts and feelings specifically related to one's appearance) are likely to yield stronger therapeutic effect than those that do not (Griffiths et al., 2018).

Adopting a train-the-trainer model, in which specialists train locally embedded HPs to implement the training to their contemporaries, would further enhance the scalability and potential for impact of training (e.g., Trompetter et al., 2014). This approach also ensures the training is less costly and adaptable to local considerations including language, culture and the clinical setting (Yarber et al., 2015).

To address HPs' lack of confidence in communicating with patients about their appearance concerns, it is vital that patient-centred communication skills are incorporated into any training programme (Levinson et al., 2010). A systematic review suggests that such skills are teachable through a combination of didactic learning, practice and feedback (Levinson et al., 2013). Such training also requires an appreciation of patients' health literacy needs, given that between a third and half of patients from EU states display low health literacy (Baccolini et al., 2021).

In this paper, we report on a real-world evaluation of a pan-European, Erasmus+ funded healthcare training project, *ACT Now*, aimed at upskilling HPs in their interactions with patients who have appearance-affecting conditions in a sustainable and cost-effective way. The five nations assigned as training sites, namely Estonia, Greece, Cyprus, Slovenia, and Romania, were selected due to the relevant expertise of the associated project partners in the field of appearance-affecting conditions. They also shared a healthcare context in which per capita health spending was below average for European Union countries, which is associated with low health literacy (OECD/European Union, 2020). Prior to the evaluation phase, the project involved assessing trainees' needs across the delivery nations, developing an ACT and communication skills-based training course, then training the trainers to deliver the programme in their respective countries. The project team comprised a collaboration of multidisciplinary partners across EU nations with combined expertise in psychological intervention, patient communication, pedagogy, dentistry, surgery, psychiatry, and running condition-specific support charities.

## Methods

### *Design*

This evaluation involved measurement of within-subjects change over time on self-reported confidence in knowledge and skills, taken pre-training, immediately post-training and at 3-month follow-up. Training was delivered by project partners, who were HPs embedded in six European countries: Cyprus, Estonia, Greece, Romania, Slovenia and the United Kingdom (UK; which was not an original delivery nation of the project, but was included after an opportunity arose to train HPs from the UK).

Table 1. Training Schedule

<i>Session</i>	<i>Content</i>
Session 1	<ul style="list-style-type: none"> <li>• Introduction to the training programme</li> <li>• Communicating with patients</li> <li>• Patients' psychosocial difficulties relating to appearance</li> <li>• Introducing the ACT approach</li> </ul>
Break	
Session 2	<ul style="list-style-type: none"> <li>• Addressing myths about appearance concerns</li> <li>• Identifying patients who are distressed</li> <li>• Having a conversation about appearance with patients</li> <li>• Communicating in an ACT-consistent way</li> </ul>
Break	
Session 3	<ul style="list-style-type: none"> <li>• Using the 'ACT Map' resource with patients</li> <li>• Applying ACT skills to patients: Mindful Breathing</li> </ul>
Break	
Session 4	<ul style="list-style-type: none"> <li>• Applying ACT skills to patients: Thought de-fusion</li> <li>• Applying ACT skills to patients: Valued action</li> <li>• Resources to help you and your patients</li> </ul>

### *Development of the Training Programme*

Before designing the training, the project partners surveyed prospective trainees in five of the six training sites (all but the UK given its position outside of the project delivery nations), to understand their training needs and preferences regarding supporting patients with appearance-affecting conditions. In terms of training needs, from 247 multidisciplinary respondents, 68% reported that they work with patients who have appearance concerns. This may underestimate the actual figure, however, as only 42% reported asking patients if they have appearance concerns. Many (76%) expressed interest in receiving training on supporting patients with appearance-affecting conditions. Regarding training preferences, more respondents (61%) said that they would attend a 1-day in-person training programme than a 2-day in-person programme (44%) or online training (46%).

After reviewing the survey responses, three of the authors met to develop a 1-day in-person training programme based on ACT. This group collectively possess research and clinical expertise on the use of ACT for individuals with appearance-affecting conditions and delivering ACT-based training to multidisciplinary HPs. The second author also contributed material on general patient communication principles, and consideration of health literacy levels within the context of social disadvantage (Sørensen et al., 2012).

### *Training Programme Content and Delivery*

The ACT Now programme incorporated ACT skills, psychoeducation on appearance-affecting conditions, and communication skills. Content was delivered through a combination of experiential methods (e.g., mindfulness exercises), interactive methods (e.g., role play), trainer feedback, and didactic teaching. The latter involved scripted verbal and multimedia presentation including case examples via videos recorded by the programme developers, and

introductory ACT videos by Dr Russ Harris (with permission). Table 1 shows an outline of the training schedule. Alongside a slide deck, the developers created a trainer workbook with scripts, trainers' notes, tips for dealing with anticipated queries from trainees, and resources for HPs to use when supporting patients. All these materials are openly available from [actnow-erasmusproject.eu](http://actnow-erasmusproject.eu).

Over two days in July 2019, two of the authors trained project partners from the other five nations in person to deliver the training in their respective countries. The programme developers then modified the materials in response to partners' feedback. Examples include changing the sequence of training slides to introduce values earlier, and more content for supporting parents of children with appearance-affecting conditions. Professional translators translated all materials into the native language of each country. Project partners then delivered the training between December 2019 and February 2020. Trainers in Cyprus, Greece and UK were psychologists (plus one psychiatrist in Greece), and dentists, orthodontists and surgeons in Estonia, Slovenia and Romania respectively.

**Table 2.** Participant Characteristics by Country

Characteristics	Total (N = 149)	Cyprus (n = 20)	Estonia (n = 28)	Greece (n = 42)	Romania (n = 24)	Slovenia (n = 23)	UK (n = 12)
Female gender <i>n</i> (%)	116 (78%)	9 (45%)	28 (100%)	29 (69%)	18 (75%)	21 (91%)	11 (92%)
Mean age ( <i>SD</i> )	36 (11.21)	28 (5.22)	46 (12.31)	35 (10.24)	29 (4.43)	28 (9.87)	42 (12.65)
Profession <i>n</i> (%) <sup>a</sup>							
Medic / Student medic	67 (45%)	0 (0%)	12 (43%)	28 (67%)	24 (100%)	3 (13%)	0 (0%)
Nurse / Student nurse	30 (20%)	0 (0%)	8 (29%)	9 (21%)	0 (0%)	13 (57%)	0 (0%)
Dentist / Orthodontist / Student dentist	14 (9%)	3 (15%)	4 (14%)	0 (0%)	0 (0%)	7 (30%)	0 (0%)
Psychiatric nurse / Psychologist / Assistant psychologist	13 (9%)	10 (50%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	3 (25%)
Charity health support worker	7 (5%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	7 (58%)
Dietician	5 (3%)	4 (20%)	0 (0%)	1 (2%)	0 (0%)	0 (0%)	0 (0%)
Health service manager	4 (3%)	0 (0%)	2 (7%)	0 (0%)	0 (0%)	0 (0%)	2 (17%)
Social worker	3 (2%)	0 (0%)	1 (4%)	2 (5%)	0 (0%)	0 (0%)	0 (0%)
Physical / Occupational / Speech therapist	5 (3%)	3 (15%)	1 (4%)	1 (2%)	0 (0%)	0 (0%)	0 (0%)
Pharmacist	1 (1%)	0 (0%)	0 (0%)	1 (2%)	0 (0%)	0 (0%)	0 (0%)
Mean years in profession ( <i>SD</i> )	9 (9.87)	4 (1.16)	19 (11.93)	6 (7.42)	4 (4.34)	15 (10.90)	8 (7.51)

Note. <sup>a</sup> Percentages shown for each profession type by country are a product of the individual countries' sample.

## Participants

Table 2 shows participants' characteristics. Participants were trainees who attended the 1-day training programme in the six countries, invited through local advertising by the project partners. Consequently, participants were predominantly HPs of the same or related professions to the trainers. From 149 trainees, 133 (89%) were qualified HPs, nine (6%) were HPs in training, and seven (5%) were health support workers from charities who support individuals with a range of appearance-affecting conditions. A post-hoc power analysis of this sample size, with an effect size  $f$  of 0.25 and confidence level of 0.95, yielded satisfactory power (0.99).

## Assessment of Training

Trainees were asked to complete a project-specific paper questionnaire at the introduction stage of the training (pre-training) and at the end of training (post-training), and via an online survey at follow-up. Our intention was to collect follow-up data at 3-months post-training in each country. However, owing to disruption from the Covid-19 pandemic, only three of the six sites (Cyprus, Estonia and Slovenia) were able to collect data at this stage (responses from  $n = 41$ ). We decided to collect data from the remaining sites at 6-month follow-up (responses from  $n = 74$ ), to coincide with a period of lesser disruption.

The 16-item questionnaire incorporated the methodological approach of designing knowledge, attitude and practice (KAP) surveys (World Health Organization, 2008), which is commonly adopted in evaluating the impact of health professional training programmes (Abdulcadir et al., 2017; Mahendran et al., 2014). Ten items asked trainees to rate their confidence in their knowledge and skills regarding different aspects of providing support for and communicating with patients with appearance-affecting conditions about their appearance concerns, including in using ACT techniques for this purpose. A Likert-type scale ranged from 1 = *not at all confident* to 10 = *very confident*. Most of these items were based on a previous survey used for European HPs in this topic (Williamson et al., 2018), while others were adapted for the ACT-focused nature of the programme. Example items include "I feel able to start a conversation about appearance with my patients" and "I can help my patients set goals to help them achieve what is important to them."

A further six items measured trainees' comprehension of the ACT model in relation to patients with appearance concerns, by assessing the consistency of their attitudes and perceptions with the ACT model. These items were adapted from the validated 16-item body image psychological inflexibility scale (BIPIS; Callaghan et al., 2015) to reflect HPs' rather than affected individuals' views. For example, we changed the original item "My thoughts and feelings about my appearance must improve before I can take important steps in my life" (Callaghan et al., p. 51) to "I believe that patients' thoughts and feelings about their appearance must improve before they can take important steps in their lives". We used the original scale points of 1 = *definitely not true* and 7 = *definitely true*. Higher item scores reflect less consistency with the ACT model, other than item 14, which was reverse-scored.

Partners from each delivery nation collected pre- and post-training data onsite, and inputted the data electronically. The same partners collected follow-up surveys online. Each partner then sent their anonymised dataset to the first author (based at a UK academic institution) to collate and analyse.

### *Data Analysis*

The first author checked and cleared all data for signs of inattentive scale completion, including single-column responses and missing data. To measure changes in trainees' knowledge and skill confidence scores over time, the first author conducted repeated measures one-way analysis of variance (ANOVA) on each of the 16 items. To decide whether the country of delivery was needed as a covariate in this model, the intraclass correlation coefficient ( $\rho$ ) of each country was calculated for pre-to-post and pre-to-follow-up score changes (Killip et al., 2004). All  $\rho$  scores (0.68 – 0.99) indicated that within-country variance was lower than between-country variance, and hence country was required as a covariate (Koo & Li, 2016). As a categorical variable, country was dummy coded with Estonia used as the reference group.

We intended to produce a scale score for the six items adapted from the BIPIS; however, internal consistency between the items was weak-to-moderate across the three timepoints ( $\alpha = 0.5 - 0.69$ ) across the whole sample, and particularly weak in Romanian trainees ( $\alpha = 0.10 - 0.45$ ), so the items were assessed individually (reliability scores are shown in Supplement A). With extreme outliers removed, all 16 items were approximately normally distributed. Mauchly's test for sphericity was violated, so the Greenhouse-Geiser statistic was used to report within-subject changes in the repeated measure ANOVA models.

Separate repeated measures ANOVAs were run for outcome changes pre-to-post (all countries), pre-to-3-month-follow-up (Cyprus, Estonia and Slovenia) and pre-to-6-month-follow-up (Greece, Romania and UK). In the 3-month data, 32% of trainees (30 / 71) did not respond. These data were treated as missing at random (MAR; Schafer & Graham, 2002) in light of the Covid-19 disruption as a highly probable cause for non-response. Through exploratory cross tabs, known variables were also shown to influence missingness, with more experienced, female, older trainees, those from Slovenia, and general nurses and medics, less likely to have responded. The first author used multiple imputation (MI) with five imputations to model the missing data, with years' experience, gender, age, country and profession type entered as predictors of the multiple regression MI model. Only two trainees did not provide their 6-month data, so available case analysis was used for this analysis (Parent, 2013). Post-hoc power analyses for the 3-month and 6-month data suggested satisfactory power (0.99).

To assess the effect of country as a covariate on the ANOVA results, between-subject F scores were calculated for the combined effect of country (dividing the mean of sum of squares by the mean square error). These were checked against critical F score by numerator ( $df$  of variables in model) and denominator ( $df$  of sample size), with F values above critical F scores indicating a significant effect of country. For any items displaying such an effect, the first author ran exploratory one-way ANOVA tests with country as a fixed factor to explore any differences in score changes between countries' samples, and post-hoc analysis to determine the specific countries' contribution to these differences.

### *Ethics*

Ethical approval for the evaluation of the training programme was provided by the Health and Applied Sciences Faculty Research Ethics Committee at the University of the West of England (reference HAS.19.01.119), the UK academic institution of the first and last authors. Project partners from each delivery country followed local research governance procedures necessary to undertake data collection.



**Table 3.** Descriptive Statistics and Repeated Measures ANOVA Results for Trainee Survey Items Between Pre- and Post-Training

Item Summary	Pre <i>M</i> ( <i>SD</i> )	Post <i>M</i> ( <i>SD</i> )	Pre-Post Change			Effect of Country on Pre-Post Change	
			<i>F</i> (df)	<i>p</i>	$\eta_p^2$	<i>F</i>	<i>p</i>
<b>Skills and knowledge (1 = not at all confident; 10 = very confident)</b>							
1. Understand quality of life impact from appearance concerns	8.8 (1.3)	9.5 (0.9)	3.67 (1)	.057	.03	2.13	.061
2. Aware of common challenges of living with visible difference	6.8 (2.2)	8.7 (1.4)	22.22 (1)	<.001	.14	5.77	<.001
3. Can identify signs of patients' appearance concerns	7.0 (2.0)	8.5 (1.3)	8.85 (1)	.003	.06	4.06	<.001
4. Able to start appearance conversations with patients	6.4 (2.1)	8.5 (1.3)	24.64 (1)	<.001	.15	4.05	.002
5. Aware of good listening skills with patients	6.6 (2.1)	8.2 (1.4)	19.45 (1)	<.001	.12	3.05	.012
6. Know how to respond to patients' expressed appearance concerns	5.6 (2.2)	8.2 (1.3)	41.00 (1)	<.001	.23	5.67	<.001
7. Understand why objective appearance badly predicts wellbeing	5.3 (2.4)	7.6 (1.7)	42.20 (1)	<.001	.23	3.29	.008
8. Can teach patients techniques to help with appearance concerns	4.3 (2.4)	8.0 (1.6)	90.48 (1)	<.001	.39	9.06	<.001
9. Understand role of patients' attentional styles on their wellbeing	5.5 (2.3)	8.1 (1.5)	40.50 (1)	<.001	.23	6.03	<.001
10. Can help patients set goals aligned to their personal values.	5.7 (1.9)	8.0 (1.5)	62.30 (1)	<.001	.31	11.98	<.001
<b>Inconsistency with ACT (1 = very consistent; 7 = very inconsistent)</b>							
11. Patients' cognitions must improve before taking important steps in life	5.2 (1.5)	4.9 (1.9)	2.30 (1)	.132	.02	1.13	.350
12. Changing negative appearance thoughts will give more control in life	6.1 (1.3)	5.3 (1.9)	0.62 (1)	.434	<.01	3.76	.003
13. Patients need to change their appearance to control their life	2.4 (1.3)	1.8 (1.2)	1.82 (1)	.180	.01	1.54	.181
14. Knowing one's values can help reach goals without changing thoughts <sup>a</sup>	2.9 (1.5)	2.3 (1.4)	0.90 (1)	.344	<.01	1.85	.107
15. Changing appearance cognitions is better than accepting their presence	4.8 (1.4)	3.9 (2.1)	0.05 (1)	.833	<.01	5.67	<.001
16. Content of appearance thoughts is more important than their function	3.9 (1.6)	3.4 (2.0)	.00 (1)	1.00	<.01	2.63	.026

Note. <sup>a</sup> Item reverse-scored.

## Results

### Pre- to Post-Training Changes

Table 3 shows the results of the repeated measures ANOVA, which assessed trainees' item score changes between pre- and post-training measurement. All but the first item of the skills

and knowledge section (items 1-10) displayed significant improvement at post-training. However, in each case, there was also a significant effect of country on the outcome. Supplement B also displays the itemised mean difference scores by country for pre-to-post training (and pre-to-follow-up), showing that mean differences were largely as expected in each country (positive mean difference for items 1-10, negative for items 11-16).

The exploratory one-way ANOVA, with country as a fixed factor, revealed a significant difference in pre-to-post score changes between countries on six of the nine significant items. As the homogeneity of variance assumption was violated, we report the Welch statistic, which is robust to heterogeneous variances (Tomarken & Serlin, 1986). Significant results were found for items 2 (Welch's  $F(5, 56.00) = 3.80, p = .005$ ), 4 (Welch's  $F(5, 53.55) = 3.32, p = .011$ ), 5 (Welch's  $F(5, 53.69) = 3.81, p = .005$ ), 6 (Welch's  $F(5, 54.14) = 8.40, p < .001$ ), 8 (Welch's  $F(5, 54.14) = 8.40, p < .001$ ) and 10 (Welch's  $F(5, 52.40) = 4.66, p = .001$ ). Post-hoc Games-Howell analysis of these items showed a trend (significant for items 4, 5 and 6) whereby Cyprus-based trainees reported greater knowledge and skill improvements than trainees from other countries. Romania-based trainees also showed a trend (nonsignificant other than on items 8 and 10) for producing the smallest pre-to-post improvements.

Table 3 also shows that on the items measuring the inconsistency of trainees' views towards patients in reference to the ACT model (items 11-16), although mean score differences were found in a favourable direction for each, none were significant.

### *Pre-Training to Follow-Up Changes*

The results of the repeated measures ANOVA assessing item score differences between pre-training and follow-up are presented in Table 4.

The analysis of imputed data from trainees based in Cyprus, Estonia and Slovenia, who took the follow-up survey at 3-months, produced significant improvements on nine of the 10 items pertaining to skills and knowledge (items 2-10), and none of the ACT inconsistency items. Only item 10 indicated a possible significant effect of country on the results. However, the exploratory one-way ANOVA with all three countries as factors revealed no such significant effect of country on the outcome (Welch's  $F(2, 22.05) = 0.82, p = .452$ ).

For the 6-month follow-up data from trainees based in Greece, Romania and the UK, significant improvements were found in five knowledge and skills items (5, 7, 8, 9 and 10) and two ACT inconsistency items (12 and 15). From these items, a possible significant effect of country was indicated for items 5, 8 and 12. Exploratory analysis showed only scores on item 8 were significantly influenced by country (Welch's  $F(2, 19.42) = 19.85, p < .001$ ). Post-hoc Games-Howell analysis revealed Greece-based trainees reported a mean improvement of 4.26 scale points on item 8, which was 2.87 and 2.98 scale points greater than the Romania and UK-based samples, respectively.

Table 4. Descriptive Statistics and Repeated Measure ANOVA Results for Pre-Training to Follow-Up on Trainee Survey Items

Item No.	Pre-Training to 3-Month Follow-Up (F-U; Cyprus, Estonia and Slovenia; <i>n</i> = 71) <sup>a</sup>								Pre-Training to 6-Month F-U (Greece, Romania and UK; <i>n</i> = 74)							
	Pre M (SD)		F-U M (SD)		Pre-to F-U Change		Effect of Country		Pre M (SD)		F-U M (SD)		Pre-to F-U Change		Effect of Country	
	<i>F</i> (df)	<i>p</i>	$\eta_p^2$	<i>F</i>	<i>p</i>	<i>F</i>	<i>p</i>	<i>F</i> (df)	<i>p</i>	$\eta_p^2$	<i>F</i>	<i>p</i>	<i>F</i>	<i>p</i>		
Skills and knowledge (1 = <i>not at all confident</i> ; 10 = <i>very confident</i> )																
1.	8.9 (1.2)	9.1 (1.1)	0.20 (1)	.589	<.01	1.01	.418	8.8 (1.3)	9.0 (1.0)	0.14	.709	<.01	10.56	<.001		
2.	6.3 (2.5)	8.2 (1.4)	13.45 (1)	<.001	.16	0.12	.988	7.4 (1.8)	8.8 (1.1)	0.75	.390	.01	6.76	<.001		
3.	6.6 (2.2)	8.2 (1.4)	9.26 (1)	.003	.12	1.45	.218	7.2 (1.7)	8.7 (1.1)	0.92	.342	.01	5.08	<.001		
4.	5.9 (2.2)	8.1 (1.6)	14.91 (1)	<.001	.18	0.23	.948	6.9 (1.9)	8.6 (1.2)	0.67	.415	.01	3.60	.006		
5.	6.2 (2.4)	7.7 (1.8)	6.27 (1)	.015	.08	0.77	.575	6.9 (1.8)	8.5 (1.1)	4.12	.046	.05	2.84	.021		
6.	4.9 (2.3)	7.5 (1.9)	21.27 (1)	<.001	.23	0.15	.979	6.2 (2.0)	8.2 (1.3)	3.28	.074	.04	3.98	.002		
7.	4.3 (2.5)	6.7 (2.0)	12.45 (1)	<.001	.15	1.97	.094	6.0 (2.2)	8.3 (1.2)	8.57	.005	.11	1.15	.340		
8.	3.4 (2.2)	6.9 (1.8)	63.64 (1)	<.001	.48	1.20	.319	4.9 (2.3)	7.9 (1.3)	5.87	.018	.07	9.28	<.001		
9.	4.9 (2.5)	7.3 (1.9)	19.29 (1)	<.001	.22	0.36	.874	6.1 (2.0)	8.2 (1.0)	10.90	.001	.13	1.33	.262		
10.	4.9 (1.8)	7.5 (1.5)	62.07 (1)	<.001	.47	7.34	<.001	6.3 (1.8)	7.9 (1.4)	9.99	.002	.12	0.81	.548		
Inconsistency with ACT (1 = <i>very consistent</i> ; 7 = <i>very inconsistent</i> )																
11.	5.2 (1.6)	4.5 (1.6)	2.78 (1)	.100	.04	1.89	.107	5.4 (1.5)	4.3 (1.8)	2.70	.105	.04	2.83	.021		
12.	6.3 (1.3)	5.2 (1.5)	2.22 (1)	.141	.03	5.99	<.001	5.9 (1.3)	4.2 (1.7)	6.11	.016	.08	2.45	.041		
13.	2.3 (1.4)	2.1 (0.9)	3.27 (1)	.075	.04	1.38	.242	2.6 (1.2)	2.6 (1.6)	0.76	.385	.01	7.51	<.001		
14. <sup>b</sup>	2.0 (1.4)	2.9 (1.2)	1.32 (1)	.254	.02	0.67	.647	3.0 (1.5)	2.8 (1.7)	1.58	.212	.02	0.67	.648		
15.	4.8 (1.5)	4.1 (1.7)	4.71 (1)	.107	.06	5.73	<.001	4.9 (1.4)	3.6 (1.6)	5.63	.020	.07	2.18	.066		
16.	3.9 (1.5)	3.4 (1.5)	2.39 (1)	.127	.03	0.27	.929	4.0 (1.7)	2.7 (1.3)	2.41	.125	.03	1.19	.323		

Note. <sup>a</sup> Results reported from pooled imputed data. <sup>b</sup> Item reverse-scored.

## Discussion

Amid the growing popularity and evidence for ACT as an approach to support patients with appearance-affecting conditions, this paper is the first to report on an ACT-based training programme for pan-European multidisciplinary HPs working with this patient group. Of 16 items, two consistently improved across all timepoints with equivalent magnitude across delivery sites. These pertained to psychoeducation on appearance concerns (item 7, addressing common misconceptions) and ACT (item 9, regarding the role of attention). It is encouraging that the programme showed the ability in specific domains to address an identified lack of HP knowledge on appearance concerns within the patient population (Dahl et al., 2012; Williamson et al., 2018). Notably, findings also show that pre-training, trainees largely recognised the important role of appearance concerns in determining affected patients' wellbeing, with a clear ceiling effect shown in item 1. This suggests that while HPs may enter training with a broad appreciation of the detrimental impact of appearance concerns, there remains great scope to improve their understanding of the psychosocial processes underpinning these concerns.

There were broadly positive but unequivocal findings regarding HPs' confidence in applying such knowledge in their patient interactions. Improvements were found across items reporting HPs' confidence in starting conversations about appearance (item 4), knowing how to respond to patients' expressed appearance concerns (item 6), and using techniques to help patients with their concerns (item 8). However, each was influenced at least in pre-to-post changes by the delivery site. Overall, this suggests a greater dosage of training may be required to confer consistent benefits to HPs' practice. With HPs expressing a preference for a one-day over a two-day training programme in the needs analysis survey, and the apparent need to facilitate greater confidence in applying trainees' learning, post-training skills practice via regular peer meetings (e.g., Trompetter et al., 2014) may be the most viable strategy to optimise HPs' confidence.

In terms of HPs' communication skills, the most directly related item (awareness of good listening skills (item 5)) improved across timepoints, and although skewed towards Cyprus-based trainees in pre-to-post training, improvements were even across sites from pre-to-follow-up. Similar results were found for HPs' confidence in knowing how to respond to patients' expressed appearance concerns, which combines communication skills and knowledge of appearance concerns. Overall, findings imply strong potential for *ACT Now* to aid multidisciplinary HPs in applying communication skills to patients with appearance-affecting conditions. As an inherently compassionate form of communication, active listening forms part of multidisciplinary HPs' remit for providing psychological support to patients (Johnson et al., 2015). It is noteworthy that HPs may hold assumptions that applying patient-centred communication like active listening would lengthen HP-patient interactions, despite the opposite having been found in research due to greater clarity and sense of validation from patients (Levinson et al., 2010). It would therefore be worth also examining HPs' behaviours and attitudes about time pressures following the training in future evaluation studies.

Regarding ACT-specific training content, trainees reported improved confidence in helping patients set values-based goals (item 10) across all timepoints, though skewed towards Cyprus-based trainees for pre-to-post outcomes. This partly supports the assertion that ACT offers relatively straightforward methods for helping individuals cultivate psychological flexibility (Hoffman & Hayes, 2018), which is likely aided in its real-world application by HPs being able

to work collaboratively with patients using associated materials such as worksheets. By encouraging HP-guided self-management, such materials can offer a means of improving patients' health literacy and self-efficacy (King et al., 2010) while also being time-efficient for HPs.

The nonsignificant improvement in HPs' comprehension of ACT applied to appearance concerns (items 11-16), even in delivery nations where psychologists delivered the training, requires consideration. This suggests that HPs did not consistently adopt the psychological flexibility model. Whether this reflects trainees' misunderstanding of the model, conscious rejection of the model, or misinterpretation of the item wording is unclear. The latter explanation could be construed from the weak-to-moderate internal consistency found in the intended 6-item modified BIPS. The particularly low reliability in Romanian trainees does point to this interpretation in this site. However, in other sites, sub-optimal reliability may also be a result of using only 6 of the 16 original BIPS items and hence depleting its original factorial structure. It may also be that adapting the original scale from first person ("My thoughts and feelings...") to third person ("I believe that patients' thoughts and feelings...") may have hindered comprehension.

Regardless, the combined findings suggest that it is easier for HPs to develop skills and confidence in supporting patients with appearance-affecting conditions, than it is to change their culturally pervasive beliefs more aligned to traditional CBT models in which thoughts are seen as the cause of distress (and hence in need of change; Cullen, 2008), to an ACT-consistent view, in which avoidance of and fusion with thoughts is posited as the primary driver of distress. Other published ACT-based train-the-trainer programmes for HPs to date have either targeted HPs who have at least some psychological training (e.g., drug counsellors in Varra et al., 2008) or have offered more long-term learning opportunities for trainees to periodically review and discuss their applied practice of the training with trainers or suitably qualified peers, enabling consolidation and extension of their learning (Trompeter et al., 2014). It may be that at least the latter approach is required to help HPs truly understand the ACT model.

It is also worth considering the finding that many of the programmes' benefits varied by delivery site, and how this may relate to the background of both the trainers and trainees. Cyprus-based trainees reported significantly greater improvements on many items than trainees in other countries, which may be unsurprising given that the trainers were psychologists, and the HPs comprised the highest proportion of psychological practitioners out of any country. In Greece, the trainers were psychological practitioners but the majority of trainees were medics. This may help explain why Greece-based HPs reported the second highest degree of improvement. Conversely, in Romania, where trainers were surgeons and all trainees were medics, trainees displayed the smallest improvement (while still showing a positive trend towards improvement).

Taken together, this implies that utilising the train-the-trainer model favours trainers with existing relevant expertise. Similarly, psychological practitioner trainees would have more obvious opportunity to practice applied learning. Nevertheless, mobilising trainers who are embedded in the professional culture of prospective trainee groups is likely to help engage these HPs (Yarber et al., 2015). This means trainers other than psychologists may be well placed to deliver the training. It may be that trainers with no psychological expertise ideally require a greater amount of training from specialists prior to delivering the training.

While a strength of the overall ACT Now project was its real-world, international scope, this also necessarily creates limitations for the validity and reliability of the findings. Unlike in

a planned research project, we were unable to control any factors, randomise nor apply methodological rigour, such as intervention fidelity checks, and forward and backward translation of materials. The wide-ranging multidisciplinary spectrum both of trainers and trainees also created high heterogeneity, and although five of the six sites shared broadly comparable healthcare contexts, structural differences inevitably exist between them. Similarly, while trainers being embedded within their respective trainee groups should strengthen acceptability of the training, this may have also introduced positivity bias. The trainee-reported outcomes were also unable to provide insight into patients' experiences of interactions with HPs related to appearance concerns.

These limitations notwithstanding, this article shows that a single-day ACT-based training programme, ACT Now, shows promise in upskilling multidisciplinary HPs to address appearance concerns in patients who have appearance-altering conditions. Findings also suggest the difficulty of conveying the ACT model in multiple languages across multiple cultures to HPs from multiple disciplines. With funding, future work could assess the effectiveness of ACT Now using the aforementioned rigorous research methods, with a greater dosage of training for the trainers, and skills practice sessions for HPs to consolidate and refine their learning. Closer attention should be paid to the linguistic and cultural validity of outcome scales in future research, especially on the ACT-consistency items. This would ideally be facilitated through input from locally embedded health professionals and/or researchers with existing ACT knowledge. Before embarking on large-scale implementation of the programme, qualitative research on the train-the-trainer experiences of trainees would help refine this crucial stage of the knowledge exchange process. At the final 'end user' stage of the process, patient reports of receiving support based on the training should be collected, such as on their conversations about appearance concerns and acceptability of patient worksheets.

It is also important to retain the priority of making ACT Now scalable while testing for evidence of effectiveness and cost-effectiveness. To do so, in future work it would be worth randomising trainees to the training delivered by the same locally-embedded HP either in its original form or augmented with post-training skills practice, alongside a no-training control.

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## Conflict of Interest

None of the contributing authors have any conflicts of interest to report for this manuscript.

## Ethical Approval

Ethical approval for the evaluation of the training programme was provided by the Health and Applied Sciences Faculty Research Ethics Committee at University of the West of England (reference HAS.19.01.119), the UK academic institution of the first and last authors. Project partners from each delivery country followed local research governance procedures necessary to undertake data collection.

## Supplementary Material

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