**The impact of clinical training changes on self-rated competency and confidence in neuropsychology: a survey of UEA-trained clinical psychologists in East Anglia**

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## Abstract

A Competency Framework, produced by the British Psychological Society Division of Neuropsychology, specifies the underpinning neuropsychological knowledge and skills required for different levels of practice. In 2016, the Doctoral Programme in Clinical Psychology at the University of East Anglia (UEA) introduced changes to align its neuropsychology teaching to the Competency Framework. This report illustrates a pilot evaluation of the impact of such changes on the self-rated neuropsychological competency and confidence of UEA-trained clinical psychologists in East Anglia using a bespoke online survey. Based on 76 respondents, the results highlighted promising effects of the changes, with post-2016 participants showing higher levels of self-rated competency and confidence in neuropsychology than pre-2016 participants. However, the discrepancy in sample size between pre- and post-2016 groups and a number of other caveats and limitations should be considered. Additional iterations of the survey, involving future cohorts following qualification, are needed to confirm these preliminary findings.

**Keywords:** clinical training; neuropsychology; competency; confidence; teaching.

## Introduction

In 2010, the British Psychological Society (BPS) established the Qualification in Clinical Neuropsychology (QiCN) as a standard for specialised clinical neuropsychological education in the UK, with the specific aim to “assure possession of the essential skills and underpinning knowledge for the expert and professional application of psychology in this field” (BPS, 2016; p. 5). Shortly after this, in 2012, a Division of Neuropsychology (DoN) Competency Framework was agreed, establishing the underpinning knowledge and skills required for different levels of neuropsychological practice in the UK (BPS, 2020).

As a consequence, the Doctoral Programme in Clinical Psychology (ClinPsyD) at the University of East Anglia (UEA) conducted a review of its neuropsychology teaching and, in 2016, introduced the following changes designed to enhance the learning experience and outcomes from the Neuropsychology module:

1. Moving the Older Adults placement from Year 2 to Year 1 to allow trainees to engage earlier with neuropsychological tasks.
2. Organising the curriculum to address foundation knowledge for neuropsychological assessment and formulation, and specific neurological presentations (e.g., stroke, traumatic brain injury), in a critical and humanistic framework.
3. Introducing a ‘passing out’ process in neuropsychological test administration and adding neuropsychology competencies to placement evaluations.
4. Introducing a neuropsychology Objective Structured Clinical Examination (OSCE) in Year 2.
5. Delivering teaching in block format, ‘Neuro Week’, covering core topics from neuropsychological assessment to intervention, scheduled in the first teaching block immediately before the first clinical placement.
6. Offering two regional CPD events providing opportunities for placement supervisors to maintain and update neuropsychological skills and discuss the implementation of curriculum changes.

Six years have passed since the introduction of these changes, meaning that they have now been fully incorporated and implemented into the ClinPsyD programme, and that three cohorts who received this training have qualified and started working as clinical psychologists. While positive informal feedback has been received, no formal evaluation of the impact of these curricular changes has been carried out.

As a consequence, an evaluation was piloted to assess the impact of the refinement of the neuropsychological components of the UEA Programme over the past six years on the self-perceived neuropsychological competency and confidence of UEA-trained clinical psychologists. This was conceived as the first stage of a longitudinal evaluation of the impact of training changes – initially limited to participants working in East Anglia due to convenience sampling – with the aim of addressing competency on fundamental neuropsychological knowledge areas and skills, and confidence in carrying out fundamental neuropsychological activities. Specifically, the present project aimed to answer the following evaluation question:

*Are there any differences in self-rated competency and confidence in neuropsychology of clinical psychologists working in East Anglia who trained at UEA before and in/after 2016?*

## Methods

### Design

A cross-sectional online survey design was adopted, as a component of the ongoing iterative process of quality improvement in the provision of neuropsychological teaching and learning in the UEA Programme.

### Participants

Due to the pilot nature of the evaluation, convenience sampling methods were adopted (Connelly, 2008). To participate in the survey, participants had to a) be a HCPC-registered Practitioner Psychologist; b) have trained at UEA; and c) be practising in East Anglia. The survey was open to all practitioners who met these criteria and was not limited to those working in neuropsychological settings or roles.

### Measures

Bespoke questions were developed based on items available in relevant training materials, such as supervisor placement evaluation forms, trainee competency logbooks, the QiCN Handbook (BPS, 2016), and the DoN Competency Framework (BPS, 2020). Measures of competency and confidence used in similar studies in psychology and cognate fields (e.g., medicine and allied health professions) were explored to improve the wording of questions.

The final version of the survey was divided conceptually into two parts. The first included questions around participants’ demographic and professional information, pre- and post-training perceived competency and confidence in neuropsychology, and the extent of neuropsychological training available while at UEA (including specialist placements). These questions were included to characterise the sample and were based on a combination of multiple choice and free text answers.

The second part of the survey consisted of 52 questions, including 39 questions about self-rated fundamental neuropsychological competency (i.e., 10 knowledge areas + 29 skills) and 13 about self-rated neuropsychological confidence in core neuropsychological activities. These were all rated on 5-point Likert-style answers informed by UEA training materials and structured as following: ‘Not Developed’ (1), ‘Slightly Developed’ (2), ‘Moderately Developed’ (3), ‘Well Developed (4), and ‘Very Well Developed’ (5). See Appendix A (<https://osf.io/7uvyh>) for a list of the competency and confidence questions.

### Procedure

Potential participants were approached directly via email, a specific JISCMail listserv group for clinical supervisors in the region, and social media (e.g., Twitter). Any communication described the purpose of the survey and a link to access the study. Formal and informal professional groups – such as the East England branch of the Division of Clinical Psychology (DCP), the DoN, the Faculty of Psychology of Older People (FPOP), and the Neuropsychology Special Interest Group of East Anglia (EANPSIG) – were approached to help disseminate the survey.

The survey was hosted on the Qualtrics® platform and took 10 to 20 minutes to complete. Data were collected between July and November 2021. Participants were able to withdraw at any time before completing the survey. As all questions had to be answered for the survey to be submitted, no incomplete responses were stored.

### Ethics Approval

Prior to beginning the data collection, an evaluation project approval was sought and obtained from the Chair of the Faculty of Medicine and Health Ethics Committee (FMHREC) at UEA (Ref: 2020/21-141). Participants’ responses were provided anonymously. All participants provided written informed consent.

## Results

In total, 76 participants completed the survey. Of these, 62 (81.16%) had started clinical training before 2016, while 14 (18.4%) had started in 2016 or afterwards. This discrepancy was most likely due to the fact that, at the time of the data collection, only three cohorts had had the opportunity to qualify since the introduction of the changes, thus limiting the number of potential post-2016 participants who had also remained to practise as clinical psychologists in East Anglia. The whole sample included 66 females (86.8%) and 10 males (13.2%), with most falling within the 30-39 age range (*n* = 35, 46.1%, *N* = 76[[2]](#footnote-3)). All 76 participants identified with the gender they had been assigned at birth. As summarised in Table 1, the majority (*n* = 71, 93.4%, *N* = 76) were employed as clinical psychologists in the National Health Service (NHS) in a community setting (*n* = 63, 82.9%, *N* = 76), with Child and Adolescent services being the most represented (*n* = 23, 30.3%, *N* = 76). On average, participants had been in post for two or three years and spent around 10% of their time doing neuropsychological work (*n* = 34, 44.7%, *N* = 76).

### Analysis

Due to the large discrepancy between the pre-2016 and post-2016 group sizes (62 v. 14), no between-group inferential analysis could be carried out. Descriptive statistics including summaries and plots were instead used to characterise the self-rated competency and confidence of participants and perform a preliminary comparison between the pre- and post-2016 cohorts.

For pre-post training self-ratings, the full range of responses is provided in the present report. However, this was not feasible for all the 52 questions focused on current competency and confidence. In this case, the responses rated as ‘well/very well developed’ or ‘not/slightly developed’ by 33.3% or more of the participants were grouped to highlight perceived ‘strengths’ and ‘weaknesses’ respectively. This approach was deemed appropriate in light of the descriptive nature of the comparison and for the sake of flow and readability of this article. Nonetheless, a graphical representation of the between-group comparison is available in Appendix B (<https://osf.io/y5pmf>). Moreover, a full list of the survey questions, along with the participants’ responses indicating specific areas of strengths and weaknesses, is also available from the authors upon request.

### Pre-Post 2016 Comparison

#### Pre-training Experience

The majority of clinical psychologist who began training at UEA before 2016 reported historically lower levels of neuropsychological competency and confidence compared to the post-2016 cohorts. In particular, 58.1% of the pre-2016 participants reported “slightly developed” neuropsychological competency (*n* = 36, *N* = 62), 17.7% “not developed” (*n* = 11, *N* = 62), 16.1% “moderately developed” (*n* = 10, *N* = 62), while only 6.5% and 1.6% felt their skills were “well developed” (*n* = 4, *N* = 62) or “very well developed” (*n* = 1, *N* = 62) respectively. On the other hand, 35.7% of the post-2016 participants reported “moderately developed” neuropsychological competency before starting training (*n* = 5, *N* = 14), while 28.6% reported “slightly developed” skills (*n* = 4, *N* = 14), 14.3% either “not developed” or “well developed” (*n* = 2, *N* = 14), and 7.1% “very well developed” (*n* = 1, *N* = 14). A similar pattern was observed for pre-training neuropsychological confidence, with 58.1% of the pre-2016 participants feeling it was “slightly developed” (*n* = 37, *N* = 62), 19.4% “not developed” (*n* = 12, *N* = 62), 12.9% “moderately developed” (*n* = 8, *N* = 62), and again 6.5% and 1.6% “well developed” (*n* = 4, *N* = 62) or “very well developed” (*n* = 1, *N* = 62) respectively. In contrast, 42.9% of the post-2016 participants reported “moderately developed” pre-training neuropsychological confidence (*n* = 6, *N* = 14), while 21.4% felt it was either “slightly developed” or “not developed” (*n* = 4, *N* = 14), and 14.3% “well developed” (*n* = 2, *N* = 14). No participant in the post-2016 cohort felt their pre-training neuropsychological confidence was “very well developed”.

#### Training experience

While at UEA, most of the pre-2016 participants felt that the neuropsychological training on the Programme “slightly developed” (*n* = 26, 41.9%, *N* = 62) or “moderately developed” (*n* = 25, 40.3%, *N* = 62), while 8.1% and 9.7% rated it as “not developed” (*n* = 5, *N* = 62) or well developed respectively (*n* = 6, *N* = 62). No pre-2016 participant found the Programme to have a “well developed” neuropsychology training. In contrast, 50% of the post-2016 participants felt that the extent of neuropsychological training on the Programme was “well developed” (*n* = 7, *N* = 14), 28.6% “moderately developed” (*n* = 7, *N* = 14), 14.3% “slightly developed” (*n* = 2, *N* = 14), and 7.1% “very well developed” (*n* = 1, *N* = 14). No post-2016 participant found the neuropsychology training on the UEA Programme to be “not developed”.

In terms of elective experience, 27.4% and 35.7% of the pre-2016 (*n* = 17, *N* = 62) and post-2016 (*n* = 5, *N* = 14) respectively underwent a specialist placement in neuropsychology while training at UEA.

#### Post-training Experience

At the time of qualifying as a clinical psychologist, 54.8% of the pre-2016 participants (*n* =34, *N* = 62) reported a “moderately developed” competency in neuropsychology, while 16.1% felt it was “slightly developed” (*n* = 10, *N* = 62), 22.6% “well developed” (*n* = 14, *N* = 62), and 4.8% and 1.6% “very well developed” (*n* = 3, *N* = 62) and “not developed” (*n* = 1, *N* = 62) respectively. By contrast, 50% of the post-2016 participants reported “well developed” competency upon qualifying (*n* = 7, *N* = 14), 35.7% “moderately developed” (*n* = 5, *N* = 14), and 7.1% (*n* = 1, *N* = 14) either “not developed” or “very well developed”.

In terms of confidence, 50% of the pre-2016 cohorts felt they had reached a “moderately developed” level by the time of qualifying (*n* = 31, *N* = 62), while 22.2% reported it as “well developed” (*n* = 15, *N* = 62), 19.4% as “slightly developed” (*n* = 12, *N* = 62), and 4.8% (*n* = 3, *N* = 62) and 1.6% (*n* = 1, *N* = 62) “very well developed” and “not developed” respectively. On the other hand, 42.9% of the post-2016 participants felt they had “moderately developed” (*n* = 6, *N* = 14) or “well developed” (*n* = 6, *N* = 14) confidence, while 7.1% (*n* = 1, *N* = 14) reported it as either “not developed” or “very well developed”.

Around one fifth of the pre-2016 participants (*n* = 12, 19.4%, *N* = 62) and 14.3% of the post-2016 (*n* = 2, *N* = 14) undertook further training in neuropsychology after qualifying, with the most common option being a Postgraduate Diploma (PGDip) in Clinical Neuropsychology.

#### Current Competency and Confidence

At the time of survey completion, pre-2016 participants reported weaknesses (i.e., rated ‘not/slightly developed’ by ≥ 33.3% of respondents) in 20.5% of competency questions and 30.7% of confidence questions, against 10.3% (pre-post Δ = 10.2%) and 15.4% (pre-post Δ = 15.3%) weaknesses reported respectively by the post-2016 participants. Similarly, strengths (i.e., rated ‘well/very well developed’ by ≥ 33.3% of respondents) were reported by pre-2016 participants in only 15.4% of both competency and confidence questions, while the post-2016 participants reported strengths in 71.8% of the competency questions (pre-post Δ = 56.4%) and 38.5% of confidence questions (pre-post Δ = 23.1%). Figure 1 provides a visual comparison of perceived strengths and weaknesses between cohorts on the competency and confidence questions.

The most notable weaknesses reported by over a third of pre-2016 participants involved the assessment of perception and object recognition, the understanding of neuroimaging reports, and the process of providing expert neuropsychological opinion and advice, including the preparation and presentation of evidence in formal settings (e.g., courts of law). On the other hand, the weakness reported by more than a third of the post-2016 participants was the supervision of trainees or assistant psychologists within a neuropsychological context. Common notable weaknesses reported by over a third of both cohorts included the assessment of language and the development and delivery of neurorehabilitation interventions.

## Discussion

This evaluation aimed to carry out a first assessment of the impact of changes to the neuropsychological components of the UEA ClinPsyD Programme over the past six years on the self-rated competency and confidence in neuropsychology of UEA-qualified clinical psychologists working in East Anglia.

The results from this first stage indicated that the majority of clinical psychologists who started training at UEA before the curricular changes reported lower historical and current levels of self-rated competency and confidence in neuropsychology. On the other hand, fewer perceived weaknesses and a considerably higher number of perceived strengths were reported by the post-2016 cohorts in a number of fundamental neuropsychological knowledge areas, skills, and activities. These findings appear to suggest a positive impact of the curricular changes implemented by the UEA course. In particular, the alignment of the curriculum to the specifics of the DoN Competency Framework may have facilitated the development of increased competency and confidence across a wider range of domains, including different types of cognitive assessment and the use of neuropsychological formulations.

The present findings also show the potential to allow for the identification of areas where further changes may be necessary, including those which, by representing common weaknesses between pre- and post-2016 participants (e.g., assessment of language, neurorehabilitation interventions), may have been overlooked by the curricular reviews implemented to date. The provision of continuing professional development (CPD) courses and/or events may also be considered by the Programme to address the specific weaknesses currently experienced by over a third of either the pre-2016 (e.g., understanding neuroimaging reports) and post-2016 cohorts (e.g., offering supervision in neuropsychology).

The potential for the UEA Programme to continue to contribute to effective neuropsychological education will therefore in part depend on the availability of clinical opportunities and expertise in East Anglia. Current challenges in this respect include an absence of consultant neuropsychological leadership across services in the region, ongoing commissioning pressures resulting in closure or reduction in provision for people with neuropsychological needs (e.g., the closure of the Oliver Zangwill Centre), and a paucity or complete lack of neuropsychological provision for those with neurodegenerative conditions (Simpson et al., 2021; Zarotti et al., 2022).

### Limitations and Future Directions

While these results are promising, a number of caveats and limitations should inform their interpretation. First, as mentioned, the disparity in sample sizes between participants who started training before and after 2016 – most likely due to the small number of post-2016 qualified clinical psychologists currently working in East Anglia – had a considerable impact on the analysis at this stage. In particular, it precluded any inferential testing, limiting the analysis to a descriptive comparison between groups, which should be considered when interpreting the findings from the present report.

In addition, some results may be partially explained by the existence of pre-training differences between groups. For instance, clinical psychologists who trained relatively longer ago and worked relatively little in neuropsychology may feel less competent and confident due to the specific complexity of some of the competencies involved (e.g., understanding neurological conditions or neuroimaging reports), which may not be practised at all outside of specialist settings. On the other hand, the post-2016 participants may feel less confident with supervision in general due to their limited professional experience.

Similarly, the majority of pre-2106 clinicians felt they only had ‘slightly developed’ competency and confidence in neuropsychology compared to the post-2016 participants, who reported ‘moderately developed’ skills. This may suggest that the latter might have been more driven towards neuropsychology even before joining the UEA Programme, which in turn may at least partially explain their increased neuropsychological competency and confidence compared to the pre-2016 cohorts. However, again due to the major discrepancy between groups, this currently represents an unanswered question.

Finally, although the focus of this evaluation was on self-ratings, the lower accuracy of self-report indicators of neuropsychological competency compared to more objective measures should also be noted as a limitation. Therefore, in order to confirm these preliminary findings, additional data are strongly warranted, based on further iterations of the present survey with UEA-trained clinicians working outside of East Anglia as well as new post-2016 cohorts once they will have qualified from Programme, thus also allowing for the adoption of inferential statistics. Such iterations might also benefit from a within-subject longitudinal design which would allow for the comparison between trainees’ perceived competency and confidence in neuropsychology at the start of training and upon qualification.

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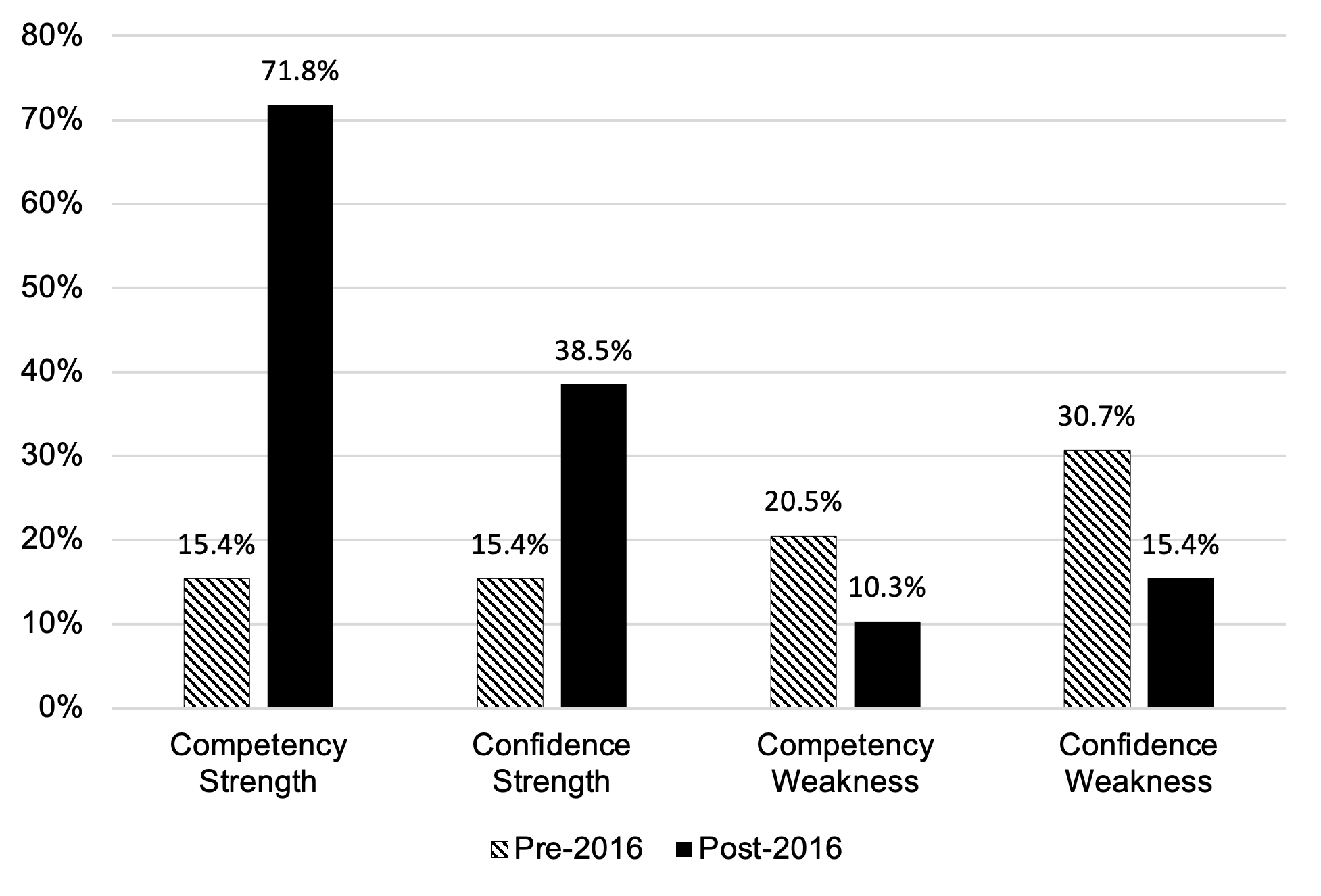
**Table 1**

Sample Characteristics.

|  |  |  |  |
| --- | --- | --- | --- |
|  | Whole sample  N (%) | Pre-2016  N (%) | Post-2016  N (%) |
| Start of training  Before 2016  After 2016 | 62 (81.6)  14 (18.4) | 62 (100) | 14 (100) |
| Gender  Female  Male | 66 (86.6)  10 (13.2) | 52 (83.9)  10 (16.1) | 14 (100) |
| Age  20-29  30-39  40-49  50-59 | 5 (6.6)  35 (46.1)  31 (40.8)  5 (6.6) | 26 (41.9)  31 (50)  5 (8.1) | 5 (35.7)  9 (64.3) |
| Occupation  NHS  Other public-funded sector  Other sector (e.g., private) | 71 (93.4)  2 (2.6)  3 (3.9) | 58 (93.5)  2 (3.2)  2 (3.2) | 13 (92.9)  1 (7.1) |
| Setting  Inpatient  Community | 13 (17.1)  63 (82.9) | 10 (16.1)  52 (83.9) | 3 (21.4)  11 (78.6) |
| Specialism  Adult  Older Adult  Child and Adolescent  Learning Disabilities  Other/Specialist | 16 (21.1)  10 (13.2)  23 (30.3)  8 (10.5)  19 (25) | 13 (21)  9 (14.5)  20 (32.3)  5 (8.1)  15 (24.2) | 3 (21.4)  1 (7.1)  3 (21.4)  3 (21.4)  4 (28.6) |
| Time spent doing neuropsychological work  0%  10%  20%  30%  40%  50%  60%  70%  80%  90%  100% | 15 (19.7)  34 (44.7)  10 (13.2)  7 (9.2)  3 (3.9)  2 (2.6)  2 (2.6)  3 (3.9) | 14 (22.6)  32 (51.6)  5 (8.1)  5 (8.1)  2 (3.2)  2 (3.2)  2 (3.2) | 1 (7.1)  2 (14.3)  5 (35.7)  2 (14.3)  1 (7.1)  2 (14.3)  1 (7.1) |

**Figure 1**

Comparison of perceived strengths and weaknesses in neuropsychological competency and confidence between pre-2016 and post-2016 participants.



*Note.* Strength = self-rated as either ‘well developed’ or ‘very well developed’ by 33.3% or more participants. Weakness = self-rated as either ‘not developed’ or ‘slightly developed’ by 33.3% or more participants.

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2. *n* = specific number of participants being referred to; *N =* whole sample or cohort subsample being referred to; % = percentage of *N* represented by *n.*  [↑](#footnote-ref-3)