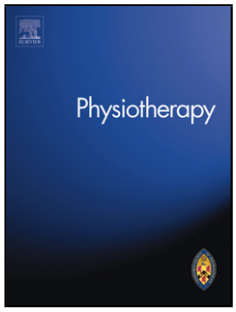

Experiences of training and delivery of Physical therapy informed by Acceptance and Commitment Therapy (PACT): a longitudinal qualitative study

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Title:

Experiences of training and delivery of Physical therapy informed by Acceptance and Commitment Therapy (PACT): a longitudinal qualitative study

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Short title: Experiences of training and delivering PACT

ABSTRACT

Objectives: Physiotherapy informed by Acceptance and Commitment Therapy (PACT) is a novel intervention that is related to improved disability and functioning in people with chronic low-back pain. This study explored physiotherapists experiences over time of the PACT training programme and intervention delivery.

Design: A longitudinal qualitative study using semi-structured, in-depth, individual interviews at three time points was conducted.

Methods: A phenomenological approach underpinned the methods. Interviews followed topic-guides developed *a priori.* Transcribed interviews were coded inductively to generate themes. Data were member checked by participants and validated by two researchers.

Participants: Eight clinical physiotherapists from three secondary care centres in the [xxx] (*n*=5 female; age, 24 to 44 years; duration of practice, 3 to 14 years) were included.

Results: Five themes emerged from the data. Experiential learning techniques were challenging but valued because they bridged theoretical principles and concepts with practice. Ongoing individual and group supervision was beneficial, but required tailoring and tapering. PACT delivery extended physiotherapy skills and practice, including techniques that acknowledged and addressed patient treatment expectations. With experience, participants desired greater flexibility and autonomy to tailor PACT delivery.

Conclusions: PACT training and delivery were acceptable to physiotherapists. Existing skills were developed and additional, applicable approaches were provided that addressed psychosocial and behavioural aspects of chronic low back pain.

CONTRIBUTION OF PAPER / KEY MESSAGES

- A psychologically-informed training programme and intervention based on acceptance and commitment therapy were acceptable and feasible to musculoskeletal physiotherapists working in outpatient settings.
- Experiential learning and ongoing supervision were valued and beneficial training approaches, which bridged theory and principles with practice.

- Physiotherapy informed by acceptance and commitment therapy aligned with existing skills and practice, while providing additional, applicable techniques that facilitated a biopsychosocial approach.

KEY WORDS: Low back pain; acceptance and commitment therapy; physiotherapy; qualitative research.

INTRODUCTION

Chronic low back pain (CLBP) is a complex and multifactorial condition, contributing to high disability and associated psychological morbidity [1-3]. Recommended CLBP management includes exercise therapy and psychological approaches [4]. Pain management programmes frequently adopt cognitive-behavioural therapy in combination with physical treatment, and can improve pain, disability and quality of life among people with CLBP [5]. However, these are often high-intensity specialist services delivered by a multidisciplinary team of healthcare professionals.

There is increasing interest in the integration of psychological approaches within physiotherapy practice. Psychologically-informed physiotherapy acknowledges the need to assess and manage patient beliefs, attitudes and emotional responses towards their condition, as well as physical symptoms and functioning [6]. Psychological interventions delivered by physiotherapists demonstrate small improvements in pain, disability and depression compared with usual care [7]; however, limited reporting of the intervention components and training received makes implementation difficult [8, 9].

In addition, physiotherapists report a lack of knowledge, understanding or practical skills as barriers to adopting psychological approaches [10]. This may be explained by variability in the quality and volume of training provided, which does not provide the tools and confidence to address the multidimensional factors of CLBP [11] nor to impact practice [12, 13]. Therefore, development and evaluation of comprehensive training programmes is needed to facilitate the adoption of psychological approaches among physiotherapists [6]. In addition, approaches should be identified that provide a good fit with existing competencies, whilst advancing psychological skills that are feasible to implement.

An approach that may be particularly suitable for physiotherapists is acceptance and commitment therapy, which has been applied to CLBP [14, 15] and demonstrates comparable effects to cognitive-behavioural therapy on pain and mood [16]. This approach is underpinned by the psychological flexibility model, which describes the capacity to persist in or modify behaviour such that it is open to experience, connected to the present moment and engaged in actions linked to important goals and values [17]. Many methods compatible with this model - goal setting, behavioural activation, metaphor-based methods and a focus on improving functioning - align well with the scope and aims of physiotherapy.

A novel intervention, Physiotherapy informed by Acceptance and Commitment Therapy (PACT), improved disability and functioning at the end of treatment in people with CLBP compared with usual care physiotherapy, and was acceptable to patients and physiotherapists [18, 19]. Physiotherapists undertook a bespoke training programme, which encompassed the theoretical underpinnings and practical delivery of the PACT intervention.

The aim of this study was to explore physiotherapists' experiences of the PACT training programme and intervention delivery over time.

METHODS

Research governance and reporting

This study received full ethical approval from [xxx] and was conducted as part of randomised controlled trial that was registered prospectively [xxx]. This publication adheres to the Standards for Reporting Qualitative Research [20] and the COnsolidated criteria for REporting Qualitative research (COREQ) [21].

Study design

A qualitative phenomenological approach underpinned the study design and methods [22], which aligned with the study aim, and supported the understanding of PACT training and delivery through exploration of participant lived experiences. Semi-structured, in-depth, individual face-to-face interviews were conducted with participants at three time points approximately 3 (T1), 9 (T2) and 15 (T3) months after commencing PACT training, reflecting post-training, early delivery and follow-up, respectively.

Sampling and recruitment

Convenience sampling was applied such that all physiotherapists from three secondary care centres in [xxx] who took part in PACT training and delivery were eligible, and were invited to participate in this study during the initial PACT training session. Data saturation was not sought because of the limited sampling pool. Informed consent was provided by all participants.

PACT training

A training programme was developed following a proof-of-concept study demonstrating the feasibility and acceptability of PACT delivered by one physiotherapist to 10 patients [23], and incorporating advice from patient advisors. Training was delivered by a Clinical Psychologist [xxx], Health Psychologist [xxx] and Physiotherapist [xxx], and comprised two days of face-to-face group learning, at least two individual supervision sessions while practicing PACT delivery, individual written or oral feedback on up to two audio-recorded PACT treatment sessions, ongoing monthly group supervision and a manual (Table 1).

PACT delivery

PACT was a brief intervention designed to complement and enhance physiotherapists existing skills and promote self-management of CLBP. It consisted of two 60-minute face-to-face sessions plus one 20-minute telephone call over approximately six weeks, conducted in a private room. A detailed description of PACT treatment has been published [18]. To avoid contamination, PACT physiotherapists did not treat individuals who were enrolled in the PACT trial and randomized to receive usual care.

Data collection and processing

Each assessment comprised an approximately 60-minute audio-recorded interview. Sociodemographic characteristics and professional experience (age, sex and duration of practice) were assessed at the beginning of the initial interview. Data were collected face-to-face in a private room at participants' workplace, except those of two participants at T3, which were collected over the telephone. T3 data for one participant were unavailable because they had moved post.

Two research associates, with backgrounds in healthcare research (xxx) and health psychology (xxx) and experience in qualitative methods, oversaw the data collection and analysis. Both were involved in developing the PACT training programme, but not in its delivery nor in the intervention development; they had established relationships with the study participants through their involvement in coordinating the PACT trial. The lead researcher had previous experience developing and evaluating a physiotherapist-led behavioural intervention.

Interviews followed topic guides developed *a priori* (Supplementary File 1) by the research associates. Questions sought to elicit perceptions of training and delivery among participants in order to describe and understand their experiences. The topic guide for T1 interviews was developed initially, and those for T2 and T3 interviews developed and refined sequentially to incorporate evidence generated at earlier time points. The topic guides were appraised by the training leads (xxx, xxx, and xxx) at each stage, and refined based on feedback.

Interviews were conducted by three MSc in physiotherapy research students, who were independent of the PACT study and therefore impartial to the development of the training programme and intervention. Students were supported to maintain reflexive journals recording their understandings, emotional responses and judgements formed both during and following interviews. One student had a background in psychology, while the others had limited knowledge of psychological approaches to chronic pain management but described a desire to learn about this through their projects. One student described feeling initial tension as a physiotherapist interviewing professional peers, but no further issues were recorded. Student journals were reviewed by the lead researcher (xxx), who also maintained a reflexive journal throughout data analyses process.

Students received instruction in qualitative methods and participated in two audio-recorded pilot interviews with feedback from a research associate. Following pilot interviews, further refinements to the topic guides were made that simplified content or added prompts to help capture detail or depth of participant accounts. Each student was assigned to data collection at one time point. Those collecting data at T2 and T3 were able to review previous topic guides and transcripts.

Analyses

Audio-recorded interviews were transcribed verbatim and the Framework methodology was used to structure data by case and emergent themes [24, 25] in NVivo software version 12 (QSR International Ltd, Southport, UK). Transcription accuracy was member-checked with participants. Data were coded inductively in chunks (i.e., statement or paragraph units) by examining texts within participants over time, then across participants. A coding framework was generated with definitions and illustrative examples of valid or invalid text for each code. The coding framework was updated iteratively throughout the inductive analysis process by the lead researcher to resonate with data accrued over time points, until there were no ambiguous, redundant or overlapping codes. Verbatim statements were saved within the framework grid, then examined to generate higher-level codes, then themes.

The lead researcher conducted the analysis, and a second researcher [xxx] reviewed and validated the coding framework applied to the full dataset. Differences in interpretation were discussed to reach agreement and a final coding framework.

RESULTS

Demographic and clinical data

Initial PACT training (training days 1 and 2) was completed by 11 physiotherapists; three subsequently did not deliver PACT treatment (one withdrew from the study, one left their post before commencing PACT delivery, and one was trained as a reserve practitioner), and were therefore ineligible to take part in the study. Eight participants were included (Table 2).

Themes

Five explanatory themes reflecting PACT training and delivery emerged from the data. These are reported below.

Experience and outcomes of PACT Training

Experiential learning techniques were challenging and valued

Initial group training aligned with participants' existing knowledge and skill; however, there was some preference for learning practical skills and participants emphasised the value of experiential learning techniques to consolidate theory and principles with practice. This included delivering as well as undertaking PACT components, for example, setting one's own values-based goals or engaging in mindfulness techniques.

> "I think being challenged to actually do some of the tasks yourself, some of the experiential learning stuff, that was nice because … it enabled you to have a bit more confidence in delivering it." (P4,T1)

Role-play was a particularly challenging but valued experiential learning technique, and provided opportunities to consider the patient perspective, translate abstract principles into practice and engage with peers. This also allowed participants to see the importance of learning from making mistakes.

> "It's easy to read something but when it comes to verbalising it, it's incredibly difficult; so, doing role play, you say something and it sounds stupid, next time you do it, you say it in a better way… It is really helpful." (P6,T1)

However, role play was described as "daunting" (P1), "intense" (P4) or "uncomfortable" (P6); for some participants, role-play was novel and unintuitive.

> "…it was a very new way of learning, and did require a lot of thinking outside our current ways of practice, so it took a little bit of time to really feel I could use it, um, properly." (P3,T1)

Physiotherapists' perceived outcomes of initial training included positive changes in communication skills, their confidence in delivering PACT and their approach to the therapist-patient relationship, which were primarily attributed to experiential approaches. Participants reported feeling empowered by their learning.

Ongoing learning and supervision is beneficial, and requires structure and tapering

Participants valued tailored feedback based on audio-recorded or observed delivery, which provided immediate and direct benefit.

> "You're likely to learn if something is very specific to your circumstance. So that kind of individual feedback is helpful." (P1,T2)

During group supervision, participants valued sharing case examples, including those that were unusual or challenging. It provided exposure to nuanced techniques, and a forum to "offload stress" (P4,T3) of difficult circumstances with constructive feedback. Participants also continued to develop their skills, including communication.

> "It opened up different avenues and … approaches to treating and managing problems that patients come up with, and also opened up a different sort of therapeutic language, which I found really helpful." (P5,T3)

Early group supervision where participants had limited experiences to share, or sessions which lacked a defined objective, were perceived as less beneficial. Additionally, travel and time for group sessions were burdens; participants at one site initiated independent peer learning instead. Among them, one participant had more than 10 years' experience including previous training in cognitive-behavioural approaches. Another participant felt that, over time, self-directed learning was sufficient.

> "Some of the supervision has been very good, but some of it hasn't really been very directed and so it is a bit of a chat without a sort of, um, agenda." (P2,T3)

> "…We're no longer turning up for supervision, because we didn't find it helpful. It wasn't adding anything, it was actually costing us more time." (P7,T3)

Self-directed learning supplemented individual feedback and group supervision, and was supported by the PACT training manual, which participants used to maintain knowledge and skills between training and delivery through to T2.

> "This manual has been quite useful actually. Every time I've wanted to look up some information because I can't remember what they said in the sessions, I've been able to find it." (P3,T1)

Experiences and perceptions of PACT treatment

PACT extends existing physiotherapy skills and practice

Expectations that PACT delivery would feel "unnatural" (P3) were overcome by early experiences which consolidated a perceived fit with existing skills and scope of practice. PACT was viewed as an "extension" (P3,T1) or "development" (P8,T1) of practice, such as performing an initial assessment, discussing the impact of pain or using value-based goal setting. However, willingness to extend practice in this way was very important.

> "I think (PACT) fits with the physio role …. but it would probably be almost impossible to deliver if you don't actually believe in what's behind it." (P5,T3)

> "…several of the skills were things that I was already aware or vigilant of, or trying to include in my own practice anyway and maybe just enhance those a little bit more." (P1,T3)

Participants noted that both usual care and PACT required a discussion around patient experiences of pain and cognitions. PACT offered strategies for approaching such dialogues, including employing metaphors, and sometimes opened a forum for challenging dialogues that otherwise might not have occurred.

> "It has significant value… it has given structure to addressing the psychological issues among the other aspects of what's going on with someone when they're experiencing pain, which physiotherapists deal with to a greater or lesser extent in a usual setting, [but] don't have training in." (P6,T3)

Despite the consistencies noted, the need to rapidly adjust from delivering usual care therapy to the contrasting stance and pace required of PACT was challenging, particularly for less experienced physiotherapists.

"Some of the [usual care] patients are physically draining, but [PACT] is very, not emotionally draining, but you know, mentally draining… It's a different type of working and sometimes it's the switching between one way to another that I find the most challenging." (P2,T3)

Desire for flexibility and autonomy with experienced PACT delivery

Early facilitators to delivering PACT included a treatment checklist and patient manual, which acted as prompts or guides and offered reassurance that all components were being delivered. With experience, participants grew constrained by the need to adhere to a research protocol and, by T3, desired greater flexibility and autonomy to adapt and individualise PACT to patient needs.

"…Physios are autonomous clinicians…even for the benefit of the patient sometimes, you need that bit of flexibility to make your own decisions and change it…because these things work best when they are individualised". (P5,T3)

"I think now I'm probably a little more lax with it … and then actually you realise, 'Maybe I've gone off the path a little bit', because you do it your own way a bit more. I guess there is a risk there that you move away from PACT as an intervention." (P2,T3)

Participants reported consistently positive views toward adopting the PACT approach, but had identified preferred components, such as a particular metaphor. One participant felt that employing the range of PACT components was essential to embracing the acceptance and commitment therapy stance.

"Ultimately, …you need to embrace... the ethos of it, which comes with using all these things. I think in isolation….I don't think it would be particularly useful." (P1,T2)

PACT provides skills to respond to perceived patient expectations of physiotherapy

Some participants believed the applicability and efficacy of PACT was affected by patient expectations of physiotherapy, including a desire for manual treatment or radiographical investigations. They reported direct challenges to the treatment approach during initial PACT sessions.

> "[PACT] is a complete contrast to what they are expecting, and so obviously if we both have different expectations it could end up just going in two sort of different directions where the patient is resistant." (P8,T1)

> "I've had some patients that have …taken it on board, being quite interactive in the session with me, whereas [others] have asked, 'Are you trying to deliver therapy to me?' which I found quite difficult to answer. (P6,T1)

Some participants described the importance of initial "buy-in" (P2,P4;T3) and establishing a rapport early in treatment to manage patient expectations. Participants perceived a successful therapeutic alliance when patients shifted their focus from pain to function.

> "…the more you work at your therapeutic relationship, and are able to explain things, relate to a patient, and make it specific to them, the less that [expectations of physiotherapy] becomes a problem. But there are still people that …find it difficult to understand the flexibility of our role...." (P2,T1)

> "If patients are hung up on, "I'm not really ready to commit to rehabilitation until my pain is better"…. getting them to shift their focus allows them to engage in the usual plan of rehabilitation… (P1,T2)

With experience, participants expressed greater certainty in the applicability of PACT for a range of patients. However, some maintained that its suitability was based on factors such as patients' readiness to shift focus (e.g., P5,P3;T2), degree of functional impairment (e.g., P6,P1,P7;T3), degree of psychological distress (e.g., P6,T3) or alignment with a biopsychosocial paradigm.

> "I found that some patients either did, or gave you the impression that they did buy into it all within about 15 minutes… or that they did not have any interest in a sort of a psychosocial approach." (P4,T3)

Some participants also noticed the juxtaposition of using PACT within a largely biomedical context; for example, PACT delivery was affected by patients who received conflicting messages about their treatment and pain from another healthcare professional or family member.

DISCUSSION

This study identified five themes illustrating the experiences and outcomes among physiotherapists of training and delivery of a novel, psychologically-informed approach to treating CLBP. Role play was a valued but challenging experiential learning technique, whilst ongoing group learning and supervision was beneficial and enhanced by structure and tailoring. PACT extended the current skills among participants, including techniques to acknowledge and address patient treatment expectations. With experience, participants desired greater flexibility and autonomy to tailor PACT delivery.

Experiential learning is a recommended technique for promoting psychologically-informed practice among physiotherapists [6], and is traditionally used in acceptance and commitment

therapy training. Opportunities to practice PACT, including role-play, were valued by participants because they bridged theoretical learning with delivery and enabled reflection on the patient perspective. Their rationale aligns with the reported functions of experiential learning [26]. Participants described some negative experiences, and some found role-play daunting or uncomfortable. This is consistent with the psychological flexibility model and aims of experiential learning, which provides opportunities to come into contact with a range of thoughts and feelings that might be encountered in delivery, in order to strengthen learning [27]. Additional support to normalise these experiences in the learning process could enhance participants' engagement with practice.

We used a psychological model of ongoing supervision, which contributed to perceived confidence and competence in PACT delivery, consistent with reported benefits of support following training in acceptance and commitment therapy [28]. The format of monthly group meetings was feasible to deliver; however, feedback on direct observation and audio-recorded PACT delivery was time-consuming and unsustainable. Our format contrasted with the supervision model traditionally used among other health professionals, such as physiotherapists, who may benefit from additional support to understand the functions of psychologically-informed supervision and maintain participation. Strategies to optimise supervision should be considered, including clearer definitions of competency in delivering PACT, as well as other psychologically-informed approaches. Additional practical tailoring could include opportunities for remote, online support, which was recommended by participants in this study, and has become much more wide spread and accepted since COVID-19.

Participants reported that PACT developed and extended their current practice, and they sought greater autonomy to tailor PACT components alongside usual practice. The desire to retain and build upon core skills is a consistent theme among physiotherapists delivering psychologically-informed interventions [14, 29, 30], and may reflect the expected discomfort or challenge arising from the processes of learning and implementing a new approach. For example, Barker et al [29] described initial tension and uncertainty when implementing acceptance and commitment therapy to a physiotherapy-led pain unit, which was addressed through reflecting on and challenging usual care and further training.

Previous reports of the introduction of acceptance and commitment therapy to physiotherapy are limited, and involve experienced clinicians with extensive training in cognitive-behavioural approaches, working in specialist pain programmes [14, 29]. By contrast, PACT was delivered in a musculoskeletal outpatient service by physiotherapists with mostly limited psychological training or practice. Our findings demonstrate the feasibility and acceptability of introducing a psychologically-informed intervention in this context, but might explain some of the challenges reported. For example, the demands of transitioning between the PACT stance and usual care could be addressed directly by administrative changes to manage the context of PACT delivery and more broadly by better integrating the use of psychologically-informed approaches across care.

An additional challenge of PACT delivery involved the perceived expectations of physiotherapy. Treatment expectations are acknowledged within a patient-centred approach and may influence the course of care in physiotherapy [11, 31, 32]. Evidence synthesised from five high-quality qualitative studies [33] found physiotherapists adopted an approach to treat CLBP that facilitated a positive relationship with the patient and satisfied expectations, which

tended to be biomedical. Treatment expectations that are not evidence-based or may be unhelpful should be addressed and modified to achieve a mutual and beneficial approach; this can be achieved through robust communication skills [31]. PACT-trained physiotherapists used techniques to manage patient expectations, including strengthening the degree of therapeutic alliance and facilitating a shift in patient focus away from pain. Thus, physiotherapists equipped with the appropriate skills can engage patients in a way that accepts and empathizes with typical conceptualisations about physiotherapy and facilitates the use of evidence-based management strategies.

A strength of this study was its longitudinal design, which enabled exploration of participant experiences as they progressed through PACT training and delivery. The sample included physiotherapists who had been practicing for different lengths of time, but was limited to the group of clinicians who underwent training. Collecting data on a wider range of relevant participant attributes could have illuminated individual differences in experiences. In particular, the competency of PACT delivery was not formally evaluated, which might have provided useful descriptive information to frame participant accounts. Multiple interviewers, with different preconceptions and perspectives, conducted data collection, which may have influenced the findings. However, procedures were closely overseen by the lead researcher (xxx) to facilitate continuity, consistency and reflexivity.

Conclusions

PACT training was acceptable to participants and could be enhanced by strategies to normalise the range of cognitive, emotional, and practical challenges of experiential learning and supervision. PACT developed existing physiotherapy skills, while providing additional, applicable skills and methods to address the coexisting psychosocial and biophysical aspects

of CLBP. Findings highlight considerations for implementing continuing professional development, including comprehensive training to support psychologically-informed practice among physiotherapists.

Declarations of interest

None

Author contributions

EG was the PACT Study Chief Investigator. EG, LM, SNor, RMM, MB and DC were co-investigators and contributed to the original idea and study design. LM, DC and EG developed and delivered the PACT training programme, with support provided by VW and MGH. MGH and VW led on and supervised data collection; MGH transcribed and analysed data; MM conducted secondary data coding and validation; MB was the principal investigator of the King's College Hospital NHS Foundation Trust site, and oversaw the study conduct there. SNoo is head of therapies at Guy's & St Thomas' NHS Foundation Trust, and contributed to the study conduct at that site. All authors contributed to manuscript preparation and approved the final manuscript.

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Ethical approval

This study was approved by the National Research Ethics Committee South Central - Berkshire (reference 14/SC/0277).

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Table 1. Description of PACT training components and providers

Training Component	Description	Provider
Training Day 1	Face-to-face group learning. Content covered an introduction to the PACT trial, theoretical underpinnings of acceptance and commitment therapy and provided opportunities to practice undergoing and delivering PACT components.	Clinical Psychologist, Health Psychologist and Physiotherapist
Training Day 2	Face-to-face group learning. Content covered shared learning among participants of their initial experiences of applying acceptance and commitment therapy components, practice of the structure and content of PACT sessions, review and discussion of PACT competencies.	Clinical Psychologist, Health Psychologist and Physiotherapist
Manual	A bespoke manual was developed and provided to participants on training day 1. Content included the physiotherapists role in behaviour change; an introduction to acceptance and commitment therapy, including its core processes, metaphors and	Not applicable

	skills; an introduction to the PACT study and detailed information on the components of each PACT session; delivery competency and fidelity; and self-reflection.	
Individual supervision	Participants were observed while practicing PACT delivery with a patient. Immediate tailored feedback was provided.	Health Psychologist
Individual Feedback	Written or oral feedback was provided on up to two audio-recorded PACT treatment sessions.	Clinical Psychologist and Health Psychologist
Group supervision	Monthly supervision sessions took place either in a private room either at a participating hospital site or at [xxx].	Clinical Psychologist, Health Psychologist and Physiotherapist

PACT, Physiotherapy informed by Acceptance and Commitment Therapy.

Table 2. Demographic and clinical characteristics

Variable	Values
Age, years*	31.5 (24–44)
Gender (n)	
Female	5
Male	3
Years of clinical experience*	6.5 (3–14)

Data for age and years of clinical experience are median (range). Due to the small number of participants who were recruited from named sites, characteristics are not reported by cases in order to maintain anonymity.