A mixed methods study of clinicians' perspectives on barriers to implementation of Treat to Target in psoriatic arthritis

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Competing interests

There are no competing interests for any author with this work.

Contributorship

ED, SS, IV and LC contributed to the study design with data collection led by JT, ED and LC. All authors contributed to data analysis and interpretation. The manuscript was written by ED and LC with feedback and final review by all authors.

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Ethical approval information (within the methods section but repeated here)

The study was approved by the Health and Applied Sciences Faculty Research Ethics Committee at the University of the West of England, Bristol (reference: HAS.18.11.056).

Data sharing statement

Data are available from the authors upon reasonable request.

Patient and Public Involvement (within the methods section but repeated here)

This preliminary research focuses on potential interventions to healthcare teams rather than directly to patients. Patient research partners are key members of the overarching project team developing implementation methods to aid treat-to-target in PsA. In addition, clinicians without an academic interest in PsA were involved in the design of this study, revised draft survey questions and contributed to the interpretation of results. Patient research partners and non-specialist clinicians continue to contribute to the overarching project committee and the data reported here will be used to inform the design of future interventional studies.

Word count – 2999/3000

Key words: treat-to-target, psoriatic arthritis, outcome measurement, training needs, implementation

Key messages

What is already known about this subject?

- T2T in PsA is evidence based and recommended in European guidelines, but currently not widely implemented

What does this study add?

- This study identifies the individual, team and organisational reasons why clinicians do not use a T2T approach in PsA
- This study provides evidence of support and resources that could be utilised to support clinicians to use T2T in practice

How might this impact on clinical practice or future developments?

- These findings can be mapped onto a behaviour change framework to inform an implementation strategy to increase T2T in PsA in practice

Objectives

In treat to target (T2T), the patient is treated to reach and maintain specified and sequentially measured goals, such as remission or low disease activity. T2T in psoriatic arthritis (PsA) has demonstrated improved clinical and patient reported outcomes and is recommended in European guidelines. However, most clinicians do not use T2T in PsA. This study examined the barriers and enablers to implementation in practice.

Methods

Sequential mixed methods comprising a qualitative design (interviews and focus group) to inform a quantitative design (survey). Qualitative data were analysed thematically, and quantitative statistics were analysed descriptively.

Results

Nineteen rheumatology clinicians participated in telephone interviews or a face-to-face focus group. An overarching theme ‘Complexity’ (including ‘PsA versus Rheumatoid Arthritis’, ‘’Measurement, and ‘Resources’) and an underpinning theme ‘Changes to current practice’ (including ‘Reluctance due to organisational factors’ and ‘Individual determination to make changes’) were identified.

153 rheumatology clinicians responded to an on-line survey. Barriers included limited clinic appointment time to collect outcome data (54.5%) and lack of training in assessing skin disease (35%). Enablers included provision of a protocol (86.4%), a local implementation lead (80.9%), support in clinic to measure outcomes (83.3%) and training in T2T (69.8%). The importance of regular audit with feedback, specialist PsA clinics, and a web-based electronic database linked to hospital/national IT systems were also identified as enablers.

Conclusions

Implementation of T2T in PsA requires an integrated approach to address the support, training and resource needs of individual clinicians, rheumatology teams, local IT systems, and service providers to maximise success.

Treat to target (T2T) is a strategy in which clinicians monitor and treat patients to reach and maintain explicitly specified and sequentially measured goals, such as remission or low disease activity[1]. The concept was developed for chronic diseases, such as diabetes mellitus and hypertension and resulted in improved clinical outcomes [2-4]. Recently, we have seen a similar paradigm shift in rheumatology [5-7], with the adoption of a T2T approach in rheumatoid arthritis (RA) revolutionising patient outcomes [5].

The **TI**ght **CO**ntrol of **P**s**A** (TICOPA) trial demonstrated improved clinical and patient reported outcomes with a T2T approach in psoriatic arthritis (PsA) aiming for the minimal disease activity (MDA) criteria[8]. This led to the 2015 European League Against Rheumatism (EULAR) PsA treatment recommendations that "treatment should be aimed at reaching the target of remission or, alternatively, minimal/low disease activity, by regular monitoring and appropriate adjustment of therapy"[9]. As in other inflammatory arthritides, remission is the ultimate therapeutic goal in PsA and should be characterised by "a complete absence of disease activity, with no signs or symptoms of active disease"[10]. However, remission can be difficult to achieve and maintain and mild disease activity in one domain may be acceptable.

Despite the trial evidence [8] and EULAR recommendations [9], T2T has not been widely implemented. Known concerns include feasibility and cost-effectiveness,[11] but we do not have a comprehensive understanding of the barriers to this approach. A 2015 UK physician survey estimated that around 90% of clinicians do not use a T2T approach (unpublished data) or routinely include specific assessments; however, some rheumatology teams have successfully implemented T2T. Outcomes can be assessed in 5-10 minutes, initially every three months but less frequently as disease control is achieved. Beyond evidence of efficacy and effectiveness, research is required to establish the barriers to T2T in practice and potential facilitators to overcome them. The long-term aim is to work with stakeholders, including clinical teams, healthcare service providers and rheumatology patients, to

implement T2T in practice. The aim of the current study was to understand clinicians' views on implementation of a T2T approach in PsA.

Methods

A mixed methods sequential exploratory design was used [12 13] comprising a qualitative phase followed by a quantitative phase. Qualitative data were collected through interviews and a focus group to provide evidence of clinicians' views of factors influencing implementation of a T2T approach. Statements for inclusion in the quantitative phase were generated based on the qualitative analysis, and their comparative importance for implementation was examined using an on-line survey. The design rationale is that the qualitative phase provided wide-ranging, in-depth data from a smaller sample [14] and the quantitative phase provided information on generalisability and relative importance from a larger sample. The study findings are presented in line with the reporting standards for mixed methods research [15]. The study was approved by the Health and Applied Sciences Faculty Research Ethics Committee at the University of the West of England, Bristol (reference: HAS.18.11.056).

The qualitative phase aimed to understand clinicians' interpretations and experiences of T2T and to generate evidence on barriers and enablers. A maximum variation sampling strategy was selected to include participants with a range of clinical roles and level of rheumatology experience, to capture diverse and common perspectives [16]. Data were collected in two stages:

1. Individual telephone interviews guided by a schedule developed by the research team (Table 1).
2. A focus group discussion guided by the interview findings (Table 2) to explore areas of agreement and/or disagreement with a different sample of rheumatology clinicians.

The online survey examined the comparative importance of interview and focus group data in a larger sample of clinicians. The survey was created by LC and ED, reviewed by co-authors, and administered using SurveyMonkey software. It was designed to be brief and easy to complete to address the challenge of low response rates among physicians[17]. There were 37 survey statements with five-point Likert response options and three questions related to demographics (professional background, years in practice, and country of practice). The statements were divided into four sections: clinician opinions; practical factors; enabling factors; and behavioural framework items (see Supplementary Materials).[18] The data on behavioural framework items were collected to support the design of a future implementation study and will not be reported here.

Patient and Public Involvement

This preliminary research focuses on potential interventions to healthcare teams rather than directly to patients. Patient research partners are key members of the overarching project team developing implementation methods to aid treat-to-target in PsA. In addition, clinicians without an academic interest in PsA were involved in the design of this study, revised draft survey questions and contributed to the interpretation of results. Patient research partners and non-specialist clinicians continue to contribute to the overarching project committee and the data reported here will be used to inform the design of future interventional studies.

Recruitment and data collection

Qualitative phase

Participants were recruited via The British Psoriatic Arthritis Consortium (BritPACT) network, a multi-disciplinary consortium of clinicians and researchers in the UK with an interest in PsA. For the interviews, study packs comprising a cover letter and Participant Information Sheet (PIS) were emailed to approximately 80 rheumatology clinicians. Approximately four months later, information about the focus groups was sent to the same mailing list with a new cover letter and PIS, but participants from the interviews were not permitted to

participate. Telephone interviews were conducted by JT, a rheumatology nurse specialist. The focus group was organised by LC (a rheumatology consultant), and facilitated by JT, with ED (a psychologist) notetaking to aid transcription. The interviews and focus group were audio-recorded, transcribed verbatim, checked for accuracy against the audio-recordings, and anonymised by removing the names of people and places. Interview data were analysed manually using an inductive thematic approach [19]. This involved coding chunks of data, then grouping clusters of related codes to form themes. It was a data-driven approach, with no a priori theory informing the identification of codes. JT analysed all interview transcripts and ED independently analysed two transcripts. The themes identified at this stage informed the topic guide for the focus group discussion (Table 2). The focus group data were analysed by JT and ED manually, using a deductive thematic approach guided by the interview findings.[20] No new themes were identified and so the findings are presented as a single analysis based on the interview and focus group data sets. Themes are evidenced by data excerpts from participants and identified by INT (interview) or FG (focus group) and a participant number.

Quantitative phase

Participants were recruited via BritPACT and the rheumatology members of the Group for Research and Assessment of Psoriasis and Psoriatic Arthritis (GRAPPA). The link was sent to approximately 510 clinicians internationally. The online survey was open for four weeks and one reminder email was sent one week after the survey opened. All responses were anonymous. The data were analysed using descriptive statistics.

Results

Interviews and focus group

Of the 80 who were invited to participate, ten consented to be interviewed; eight rheumatology consultants, one physiotherapist and one nurse specialist. Their time working in rheumatology ranged from 5-26 years, with one consultant delivering PsA-specific clinics.

Interviews lasted between 25-35 minutes. The focus group included seven rheumatology consultants and two specialist registrars. Their time working in rheumatology ranged from 3-22 years, with three clinicians delivering PsA-specific clinics. The focus group lasted for 102 minutes. Following review of the interview and focus group data, authors ED, JT and LC identified an overarching theme of 'Complexity', which incorporated three themes of 'PsA versus RA', 'Measurement', and 'Resources'. An underpinning theme of 'Changes to current practice' captured the tension between themes of 'Reluctance due to organisational factors' and 'Local champions driving change' (see Figure 1).

Complexity

T2T in PsA was perceived as a complex process, including (i) the disease itself and its comparison to RA, (ii) the measurement challenges of T2T, and (iii) the resources needed to support implementation.

- **PsA versus RA**

Participants often compared PsA management to RA, where T2T is a more familiar approach, more adequately resourced, and more widely implemented.

> *"all the resources have gone into RA pathways" [INT 05]*

Some participants thought that T2T in PsA is *"not adequately evidence based and therefore no publicity and therefore low on the training profile" [INT 06]*. In addition, PsA can be complex to manage clinically, making agreement on targets more of a challenge than in RA.

> *"psoriatic arthritis is a complex disease, it's much more complex than rheumatoid arthritis or ankylosing spondylitis" [FG 01]*

- **Measurement: what, how and by whom?**

T2T requires treatment regimens to reach and maintain explicitly specified and sequentially measured goals. Participants discussed the complexity of developing protocols and

guidelines setting out these targets, with a view that *"you don't necessarily have to follow a guideline to treat a patient well" [INT 06].* Challenges included reaching consensus on what to measure, which instruments to use, how often measurement should happen, who would collect the data, and how it would be stored and accessed. Participants' views were shaped by what could be feasibly achieved within time-limited clinics.

> *"if I am going to engage in T2T for my PsA patients, the questions are what assessments need to be completed and how do we store these? They have to be relevant to our care and accessible to those that need them, then we need to engage the IT department" [INT 08]*

Participants discussed the need for training in measurement and assessment and concerns about being too prescriptive and losing sight of patient preferences for treatment.

> *"it's not a fair perception of treat to target, but it's almost tick box medicine if you haven't hit this number, therefore we're are going to change you to this … I want to ensure we're still thinking about the patients" [INT 02]*

- **Resources: team and organisational level support**

Participants identified a range of resource requirements spanning team needs (e.g. nursing support and registrar training) and organisational issues (e.g. length of appointments and IT support with database systems).

> *"this [T2T] does not depend on the individual, it depends on the team and in particular the consultant that runs this clinic" [INT 03]*

One challenge was managing patients with PsA in a general rheumatology clinic, rather than a dedicated PsA clinic.

> *"if you are doing a general clinic and you have a very general mishmash of patients, it's just not pragmatic, it's not practical to be doing lots of these activity assessments" [FG 04]*

Changes to current practice

Underpinning the overarching theme of complexity is the theme of changing clinical practice. There was a tension between a reluctance to change, often attributed to organisational factors, and motivation to change, often due to individual determination to implement new ways of working.

- **Reluctance due to organisational factors**

Participants described the pressures of providing treatment in the current healthcare system, with limited time and staff resources. They identified the need to address other issues such as appointment waiting times before introducing an approach that might require intensive monitoring.

> *"we are still struggling with our follow up appointments, particularly at the beginning when it's important" [INT 01]*

However, participants identified two system-level factors that could facilitate change: the use of external mandates, tariffs or funding; and being able to demonstrate cost-savings.

> *"I thought it [T2T] worked, but based on health economics I thought it was hard to justify, but with biosimilars getting cheaper, it's a much easier argument now" [INT 02]*

- **Local champions driving change**

In rheumatology teams implementing T2T, change was typically driven by individual clinicians with a specialist interest in PsA. They led on the development of PsA-specific care pathways, sought external information, training and support, pushed their local service forward, and championed a T2T approach.

> *"I think it's getting the right people and if you have a local lead champion somebody who will lead it and train the registrars and get people together in a clinic and do that then I think that's probably the key" [FG 09]*

Online survey

Survey participants comprised 138 rheumatology consultants; 5 rheumatology trainee/fellows; 7 advanced practitioners; 1 dermatologist; 1 epidemiologist; and 1 rheumatology practitioner (response rate approx. 30%). Time working in rheumatology ranged from 1-50 years (median 16; mean 18.5). Participants giving their country of practice were based in UK (33), Europe (37), North America (21), South America (25), Asia-Pacific (19), and other (7).

The first survey section asked about opinions on T2T and highlighted some differences. While there was moderate support for the opinion that *"PsA is a complex variable disease that is difficult to assess clinically within a T2T approach",* with 54% of participants strongly agreeing/agreeing, 36% of participants strongly disagreed or disagreed with this statement. Similar divergence was seen with the question "*Following a T2T approach is not sufficiently flexible to tailor treatment for patients as individuals*", with 40% of participants strongly agreeing/agreeing and 44% of patients strongly disagreeing/ disagreeing.

However, many participants supported the potential benefit of a T2T approach. Only 15% of participants strongly agreed/agreed with *"I don't believe that a T2T approach will improve outcomes for my patients above my usual clinical care"* and only 20% strongly agreed/agreed that "*In my service, I do not think it is a priority to implement a T2T approach at present*".

Responding to practical factors (five statements) about T2T implementation, just over half the participants (54.5%) thought that limited clinic appointment time was an important/very important factor in the difficulty of collecting outcome data. In response to the statement about the difficulty of collecting outcome data in mixed rheumatology clinics, just over 35% of participants reported that this was important/very important, compared to just over 49% who

reported that it was unimportant/very unimportant. Fewer than 18% of participants rated a lack of training in measuring outcomes in arthritis and enthesitis as important/very important for adopting a T2T approach. However, this figure increased to almost 35% for assessing skin disease.

The final section asked about enabling factors (14 statements) to support T2T. The top ten enabling factors, rated as important/very important (Figure 2), included: *"A protocol to support the implementation of T2T to use in my/my team's clinics"* (86.4%)*; "A member of my local team to lead on T2T implementation"* (80.9%)*; "Support for me/my team in clinic to measure the outcomes needed to implement T2T"* (83.3%); and *"Training for me/my team about implementing T2T and the evidence for this approach"* (69.8%)*.* The importance of regular audit with feedback, specialist PsA clinics, and a web-based electronic database linked to hospital/national IT systems were also identified as enablers.

Discussion:

Currently, it is not common practice in the UK or internationally to use a T2T approach in PsA despite evidence of clinical effectiveness. Identification of barriers and enablers is key to understanding why uptake is low and for informing the design of an implementation study.[18] Our qualitative data identified barriers that included the clinical complexity of PsA, a preference for clinical autonomy, the lack of available protocols, treatment of PsA in general clinics, and perceptions about insufficient reason to change. Enablers included clinical leadership, the provision of team training in PsA and its measurement, the availability of nurse support in clinics, setting up IT systems and dedicated databases and external incentives and/or requirements. Alongside organisational factors, physician beliefs are a key determinant of change. Evidence shows that champions are important positive influences in healthcare innovation, from initiation and development through to implementation[21]. Overall, the survey data supported the qualitative findings, although there were some discrepancies. While the qualitative findings highlighted the challenge of collecting outcomes when PsA

patients attend general rheumatology clinics, this was not perceived to be an issue for most survey participants. A surprising survey finding was that a lack of training in outcome measures for *"I/my team"* was not identified as a significant barrier influencing adoption of T2T in participants' own clinical settings (section 2: practical factors), but provision of training for *"me/my team"* was identified as a key enabler (section 3: enabling factors). One reason for this could be that while participants were confident about their own knowledge, they were aware of other team members who would benefit from training. This would fit with the qualitative data on the importance of team support, especially for nurses and registrars.

Many factors determine whether research evidence becomes established in practice. Unsurprisingly, systematic reviews have found that multifaceted implementation strategies are more effective than simple approaches.[22-24]. The fit between the intervention being implemented and the context in which it will be embedded is critical. Consideration must be given to the external context (including policies, incentivisation structures and dominant paradigms); organisational factors (including culture, available resources, integration with existing processes and skill mix); and individual factors (including professional role, and underlying philosophy of care).[24] Several theoretical frameworks exist to inform implementation strategies, including behaviour change techniques and normalisation process theory.[25 26] The current study findings will be used in combination with theoretical frameworks to inform an implementation strategy for T2T in PsA.

Strengths and limitations:

A strength of the current study is that participants were based in clinical practice, working in a range of settings and countries with different populations. Data were provided by a broad sample using different methods of collection. The interviews generated detailed evidence on views and experiences of T2T in PsA and the focus group provided an opportunity for a new sample of clinicians to debate this evidence. These qualitative findings were then put to a wider, international sample, which provided further confirmation of the key issues. The consensus on the range of factors that need to be addressed to support implementation

highlights the potential for international collaboration in this area. However, it is important that shared models of implementation are flexible enough to adapt to cultural differences, such as spheres of influence and motivations to change practice. Although current findings are based on data from many clinicians, participants were likely to have an interest in the care of PsA, which might have biased the findings. Therefore, their views might not be transferable or relevant to other UK rheumatology clinicians. Another limitation is a low level of input from other rheumatology professions such as nurses, and from other stakeholders who shape service provision, such as commissioners.

Implementation of a T2T approach in PsA will require an integrated approach that addresses the support, training and resource needs of individual clinicians, rheumatology teams, local IT systems, and service providers, and aligns with their current priorities, to maximise success.

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Table 1: topic guide for interviews

Context: clinical workload & care pathways	• Number of clinics, patient numbers • Any clinics specific to PsA • Length of consultation • Patient waiting times between diagnosis and follow-up; from follow-up to starting meds; involvement of team members
Views and experiences of Treat to Target (T2T) for psoriatic arthritis (PsA)	• Your definition of T2T in PsA • What's measured and why? • How is it recorded? • Variation across the team
Influences (individual and team)	• Guidelines/pathways/protocols • Changes that could be made
Enablers	• What helps/encourages T2T
Barriers	• Challenges, difficulties

Table 2: topic guide for focus group (based on interview findings)

The variation in definition and interpretation of T2T	• Discuss remission and MDA • Explore formal assessment and measurement
The variation in guidelines, protocols, and pathways	• Explore available protocols in place currently • Explore meeting individual patient needs in T2T • Explore clinical autonomy in T2T
Barriers to implementation	• Discuss resources and time (currently) and requirements for T2T (ideally) • Discuss the role of external incentives and/or requirements

Figure 1 – Overarching themes around implementation of T2T in PsA as identified by qualitative interviews and focus group

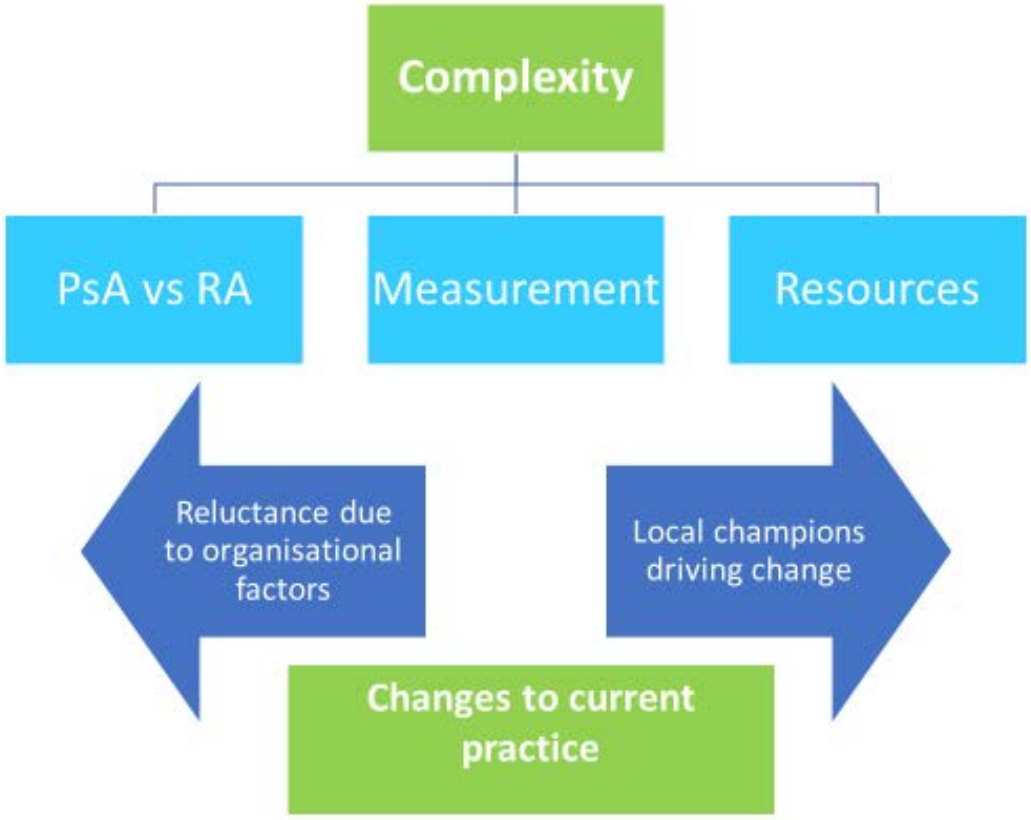

Figure 2 – Top ten enabling factors to support T2T implementation in PsA as identified in the quantitative survey.