Characteristics of patients seeking national health service (NHS) care for Achilles tendinopathy: A service evaluation of 573 patients

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Title

Characteristics of patients seeking National Health Service (NHS) care for Achilles tendinopathy:

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Abstract

Background

Achilles tendinopathy is a common condition that is often still symptomatic 10 years after onset. Much of the available research has focussed on active populations, however our experience is patients seeking care in the UK's National Health Service (NHS) may be different.

Objectives

To determine the characteristics of patients receiving NHS care for Achilles tendinopathy (AT).

To describe the utilisation of resources and the effectiveness of AT management in the NHS.

Methods

A data extraction tool was developed and used to retrospectively extract the characteristics of 573 patients diagnosed with Achilles tendinopathy.

Results

NHS Achilles tendinopathy patients averaged 57 years old, had a Body Mass Index of 31, and 69% had at least one other long-term health condition. These included musculoskeletal complaints (59%), hypertension (30%), Chronic Obstructive Pulmonary Disease or asthma (17%), cardiovascular disease (13%) and diabetes (13%). Subsequently medication usage was higher than the general population and included drugs that have been linked to the pathogenesis of tendinopathy. On average, healthcare providers conducted 3.8 therapy sessions and 26% of patients had radiological investigations. Outcome measures were commonly absent with Visual Analog Scale (VAS) scores documented in 51% of records, and patient-reported outcome measures like VISA-A only appearing in 3% of cases. Reports on psychosocial factors were seldom documented.

Conclusion

Individuals diagnosed with Achilles tendinopathy through NHS services exhibit distinct characteristics that diverge considerably from those currently represented in the published research used to develop clinical guidelines. NHS Achilles tendinopathy patients have multiple long-term health conditions and higher medication usage.

Key words

Tendinopathy, Achilles, multimorbidity, sedentary, long-term conditions

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Introduction

Achilles tendinopathy (AT) is a common musculoskeletal (MSK) disorder causing pain and functional loss, affecting more than 300,000 people per annum in the UK (Kearney et al., 2016). AT has historically been associated as an injury reported by people participating in sports or athletic activities. However, risk factors for AT include inactivity, ageing and the presence of conditions such as obesity, hypercholesterolaemia and diabetes (Baskerville et al., 2018; Macchi et al., 2020; Gaida, J. et al., 2009) and there is evidence that only 35% of people with AT participate in sports, suggesting a role for non-sporting factors (de Jonge et al., 2011).

Progressive calf-muscle strengthening exercises, as recommended by clinical practice guidelines, have been shown to facilitate tissue remodelling, reduce pain, and enhance overall function and endurance. These exercises have proven effective in clinical trials for both athletic and sedentary populations (De Vos et al., 2021).

Despite the availability of this effective intervention, 23-60% of people with AT continue to experience pain and significant negative impacts on quality of life, physical activity, health, and work productivity a decade after diagnosis and treatment (De Vos et al., 2021). Currently with in the NHS there is no data reporting the clinical outcome for patients with AT. This dramatically hinders benchmarking activities, service improvement and standardisation of care.

Adherence to the effective AT exercise interventions is consistently reported to exceed 70% in athletic and physically active populations (Alfredson et al., 1998, Beyer et al., 2015; Herrington et al., 2007; Mafi et al., 2001). However, adherence is much lower in individuals living in deprivation and those with conditions such as cardiovascular disease (CVD), diabetes, obesity, and other chronic musculoskeletal conditions like osteoarthritis, which have metabolic issues linked to their pathogenesis (Rickie et al., 2023; Ali et al., 2017; Mumu eta l., 2014; Picorelli et al., 2014; Rivera-Torres et al., 2019).

Moreover, ethnically diverse patients, those living in deprivation and those with comorbidities are often excluded from research on AT interventions, and instead focus on motivated individuals from privileged backgrounds leaving us unaware of the most effective management approaches for these populations (Rio et al., 2020; Mc Auliffe et al., 2021a).

The experience of pain due to AT impacts a person's ability to perform activities of daily living (ADLs) (Verges et al., 2022) and sporting activity (Silbernagel et al., 2007; Corrigan et al., 2018; Silbernagel et al., 2020) with evidence suggesting that impaired function is associated with the experience of anxiety and depression (Silbernagel et al., 2020). These psychological factors associated with MSK pain can lead to greater treatment costs (Gore et al., 2012).

In similar MSK conditions such as lower limb osteoarthritis we know that psychosocial issues are prevalent and have significant impact on quality of life outcomes (Wise et al., 2010) leading to tailored management to address these factors (Hurley et al., 2010). Psychosocial factors such as kinesiophobia and catastrophising are important considerations for people with AT (Slagers et al., 2021; Silbernagel et al., 2022; Stubbs et al., 2023) with recent research identifying these to be particular important in a AT subgroup of individuals (Hanlon, 2022; Hanlon, 2023; Hanlon et al., 2023) negatively impacting recovery. However, it is unclear what proportion of people living with AT in the NHS present with these psychosocial factors. Understanding the extent of this issue would be useful to direct future research focus.

The economic burden related to MSK conditions can be further impacted by added imaging costs. MSK imaging is often unnecessary and fails to guide interventions in many cases (Nice, 2008), despite this the use of imaging continues. Unfortunately, the current literature fails to report the current utilisation of imaging and modalities of choice. This has potential health care and economic cost implications.

The pathogenesis of tendinopathy follows a similar pattern to osteoarthritis, with chronic inflammation related to long-term conditions being a key driver (Lui & Yung, 2021). Similar to knee osteoarthritis, where long-term conditions and psychosocial factors impact quality of life outcomes, it is likely that approaches successful for highly motivated athletic populations will be less effective for patients with other long-term health conditions unless tailored regimes are developed (van Dijk et al., 2008; Leite et al., 2011; de Rooij et al., 2017; Parkinson et al., 2017).

Currently, there is a lack of information about the characteristics of NHS patients seeking treatment for AT. This information gap has the potential to impede the provision of effective clinical care, especially if the patient profiles differ from those used to formulate existing guidelines, which are primarily tailored to athletic populations known to respond well to conventional treatments. (Hanlon, 2022).

Aims

The primary aim of this study was to identify if health characteristics of NHS patients with AT were comparable to those of the general population in the same locality and more widely comparable to the national health profile across the United Kingdom.

Secondary objectives sought to assess the utilisation and reporting of radiological imaging, and the clinical outcomes resulting from physiotherapy interventions.

Method

A retrospective service evaluation.

Data gathering and Analysis

The NHS MSK provider serves a community with a diverse range of ethnocultural backgrounds that represents a typical NHS population. The MSK service used for this service evaluation is referred approximately 200 AT patients per year. Covering areas of high and low social and economic deprivation.

Suitable patient participants were identified from Egton Medical Information System (EMIS) web, the medical record system used in the local health service for both Physiotherapy and General Practitioners.

A search for the EMIS clinical diagnosis code of ‘Achilles Tendonitis’, as attributed by the consulting clinician based on clinical presentation was undertaken between the dates of 2017-2021. Diagnosis of AT has been defined as a clinical diagnosis (Hutchison et al., 2013; Reiman et al., 2014) The EMIS system is limited to Achilles tendonitis as a single Achilles Tendon diagnostic code, helping to ensure that patients are not coded under multiple variants.

A data extraction tool was developed via the author group that included three tendon experts and piloted through three rounds. The data collection process was then refined, and a step-by-step guide was video recorded and shared during training with the data extractors. Patient characteristics of interest were identified using previously published literature (Stephens et al., 2019). Additional areas of interest related to age, gender, body mass index (BMI), co-morbidities, psychological and psychosocial factors, medications usage and imaging details as identified in the recent consensus for reporting participant characteristics in tendinopathy research (Rio et al., 2020). All patients were pseudonymised with a numerical identity and stored in adherence with medical records standards and GDPR requirements.

A total of 26 data extractors were trained and involved in data collection, these individuals were all MSK physiotherapy specialists, with at least 12 months MSK experience. Data were collected on site. The data collection period started on 1st October 2021 and finished on the 31st May 2022.

Data analysis

Participants who had incomplete information were removed and 10% of all participants' data was checked to ensure that all those included for analysis had all the information. Where possible the dataset (e.g. frequency of co-morbidities) was compared to local (Lancashire Council) or national data using the National Health Service England (NHSE) Health Survey or quality and outcomes framework (NHSE, 2021; NHS Digital, 2022). Descriptive statistics were reported for relevant variables.

Deprivation was determined by the patients postcode and using the The index of multiple deprivation (IMD) decile. The IMD ranks every small area in England from 1 (most deprived area) to 32,844 (least deprived area). IMD classifies these areas into ten deciles based on relative disadvantage, with decile 1 being the most deprived and decile 10 being the least deprived. If an area is in decile 1 then it is in the top 10% of most deprived regions in the UK. An area in decile 10 would put it in the top 10% of least deprived regions in the UK.

Psychological factors where split into 2 groups, emotional or cognitive factors following the ICON statement from the International scientific tendon symposia working party: (McAuliffe et al., 2022)
1. Emotional factors included- Past medical history of depression, distress, anxiety, stress and anger.
2. Cognitive factors included - maladaptive beliefs, fear, kinesiophobia, catastrophising, negative pain beliefs, self-efficacy.

A participant was classified as a responder if it had been documented that there was an improvement of more than 15 points on Victorian Institute of Sport Assessment (VISA) questionnaire (Iversen et al., 2012), improvement of >2 points on Visual Analogue Scale (VAS) for the severity of pain (Carlsson, 1983) or other subjectively reported improvements in pain or function (i.e. returned to activities or able to ascend/descend stairs or walk to shops with a reduced severity pain). (Bilitou et al., 2022; Challoumas et al., 2023) A participant was classified as a non-responder if their pain and/or functional ability was reported as worse or unaltered after treatment.

Ethical approval

The local NHS research and development department were involved in the process and had oversight of the audit of the patient notes which were used in this retrospective chart review. The NHS health research authority ethical approval was not required for service evaluation and patient medical records were only accessed by local clinicians with no data being shared outside the NHS trust.

Results

A total of 988 patients electronic records were identified and following exclusion of records which were missing electronically due to being paper notes and not available to be reviewed or had an inaccuracy related to the diagnosis code, there remained data for 573 patients.

Primary objective

Demographic data and Clinical presentation

Patients mean age (SD) was 57 years (13.45), and mean BMI (SD) was 31kg/m² (6). The majority (85%) were overweight (BMI >25 (WHO, 2020). Approximately half (51%) of the patients were female (Table 1).

Table 1. Patient profile.

Characteristic	**Study Mean (SD)**
Age (yr)	57 (13.45)
Gender	51% Female
BMI (kg/m²)	**31 (6.43)**
Ethnicity	8.6% Asian (Indian, Pakistani, Bangladeshi) 0.2% Black/African/Caribbean 1.9% Mixed heritage/multiple ethnic groups 0.7% Other 60.9% White/Caucasian 27.7% Not identified/prefer not to say

Patients had experienced Achilles tendon pain for a period ranging from 3 to 6 months prior to their medical consultation, with a VAS of 8 as the most common severity (Table 2).Pain scores were not recorded in 49% of the patient notes (table 2). Out of the 493 patient notes where it was recorded, 54% of patients were experiencing mid-portion tendinopathy and 35% had insertional tendinopathy with the rest being combined insertional and mid-portion (table 2).

Table 2. Clinical presentation data

Duration of symptoms	Percentage of study group	Number /573
0-3 Month	19.9%	114
3-6 Months	24.3%	139
6-12 Months	16.1%	92
12-24 Months	16.1%	92
2-5 Years	12.4%	71
5+-10 Years	3.7%	21
10 Years +	2.8%	16
Unrecorded	4.9%	28
Pain levels (numerical rating scale of pain)		
NRSP score <5/10	10.12%	58
NRSP Score >5/10	40.66%	233
NRSP not recorded	49.2%	282
Site of tendinopathy		
Combined	9.8%	56
Insertional	30.9%	177
Mid Portion	45.4%	260
not recorded	14.1%	81

Deprivation data

The index of multiple deprivation decile had a mode of 1, and 44% of the cohort fell into the lowest 3 categories. The breakdown of each decile of deprivation is reported in table 3. The data shows patients in the service were often in the regions with the most deprivation. The lower the decile the more deprived the area/region. For example a decile of 1 means the postcode is within the bottom 10% of deprived areas in the UK.

Table 3. Deprivation data

Deprivation scales	**% or local population in the lowest 3 deciles**	**Mode**
Index of multiple deprivation Decile	44.2%	1
Income Decile	39.8%	1
Employment Decile	47.5%	1
Education and skills decile	36.1%	2
Health and Disability decile	59.7%	1
Crime Decile	35.3%	3
Barriers to Housing and Services Decile	58.5%	10
Social region	48.9%	1

Decile 1-10 with 1 being the most deprived and 10 the least for all deprivation scales apart from ‘barriers to housing and service decile’ that is reversed with 10 being the most deprived and 1 the least.

Medical conditions and medication usage

Condition	**National prevalence**	**Local prevalence**	**Study prevalence**	**Numbers (n= /573)**
At least one comorbidity	**40%** [33]	*	**69%**	**395**
Hypertension	15% [34]	16%	**30%**	172
Hypercholesterolaemia	24%-59% [33,37]	*	15%	88
Cardiovascular disease **	8% [34]	10%	**13%**	73
Diabetes	8% [34]	8%	**13%**	72
Respiratory	9% [34]	10%	**17%**	98
Renal	4% [34]	5%	3.5%	20
Neoplasm	4% [34]	4%	**7%**	38
Rheumatology ***	4% [38-40]	1% [34]	**5%**	31
Obesity	26% [33]	27%	**36%**	206
Overweight	63% [33]	66%	**81.5%**	467
BMI (Mean and SD)	**27** [33]	*	**31 (6.43)**	*
Digestive (IBS, IBD, Celiac, Diverticulitis)	4% [33]	*	**13%**	72
MSK conditions	**17%-32%** [41]	**20.5%** [32]	**59%**	**338**
Achilles tendon Rupture (ATR)	*	*	3%	14
Low Back Pain (LBP)	*	*	11%	60
Lumbar nerve root pain (LNRP)	*	*	3%	16
Systemic/chronic pain	*	*	2%	13
Lower limb OA	*	*	12%	67
Lower Limb other	*	*	16%	94
Lower limb arthroplasty	*	*	1%	5
Previous Lower Limb tendinopathy	*	*	5.%	31
Combination of 2 or more MSK conditions	*	*	7%	38

Table 4. Additional long-term conditions

IBS = irritable bowel syndrome

IBD = inflammatory bowel disease

OA = osteoarthritis

MSK = musculoskeletal

*Identifies no local or national meaningful data

** Cardiovascular disease includes atrial fibrillation, coronary heart disease, heart failure, peripheral vascular disease, stroke or transient ischeamic attack.

*** Rheumatology condition consists of rheumatoid arthritis, spondyloarthropathy, psoriatic arthritis and Gout.

Many individuals within the sample had multiple long-term conditions (table 4) with 69% having AT plus one other comorbidity. MSK conditions where the most common long-term condition with 59% of the group having other MSK conditions. These ranged from low back pain to lower limb osteoarthritis. Hypertension was the most prevalent medical condition at 30% of the AT group, with local prevalence being 16%. Equally cardiovascular disease, diabetes, respiratory disease (asthma] and Chronic Obstructive Pulmonary Disease), neoplasms, rheumatological disorders and obesity were all overrepresented according to local and national prevalence.

Table 5. Medication.

Medications	**National data (ONS)**	**Percentage of 573 AT patients**	**Number of AT patients**
NSAIDS	11% combined usage.	34%	194
Analgesics	*	38%	217
Antibiotics (fluroquinolones only)	*	1%	5
Inhaled steroids	5% (includes any medication for COPD/Asthma)	12%	69
Systemic (oral) steroids	*	6%	32
HRT	*	6% of all females	18
Topical pain relievers	*	12%	70
Antihypertensives (overall) Renin -Angiotensin Inhibitors	15% - All antihypertensives.	21% overall antihypertensives 8% Renin-Angiotensin In	121 48
Statins	14%	24%	138

NSAIDS = non-steroidal anti-inflammatories
COPD = chronic obstructive pulmonary disease
ONS = Office for National Statistics
*Identifies no national meaningful data

Medication usage was higher for many medications than the national ONS data would anticipate with NSAIDS used by 34% of patients and inhaled steroids, antihypertensives, and statins was also being higher Analgesics were commonly used, 38% of patients, but no national ONS data exists to compare against (Table 5).

Psychological and psychosocial factors

Physiotherapists reported psychological factors for 35 patients, these where coded as emotional factors for 28 patients, cognitive factors for six patients and one patient had both cognitive and emotional factors identified.
Psychosocial issues (quality of life, education, work related issues including income, unemployment, sick leave, Urban residence, ethnic minority, socioeconomic status, social support/exclusion) were identified in 11 patients records.

Secondary objective

Imaging data

Of the 120 (21%) who had imaging a total of 184 investigations were completed. The most frequent form of imaging was ultrasound with 101 patients (84%) receiving that imaging method. MRI's were used for nine patients (8%), one patient received a CT scan and the remaining nine individuals (8%) imaging method was not clearly distinguishable from the medical records. There was a large variation in the language and terminology used within the medical reports e.g. tendinitis, tendinopathy, tears, splits, and holes. Some reports were extensive and covered all tissue which was normal whereas other reports only identified pathological change.

Outcome data

The number of treatment sessions ranged from 1-31 with a mean of 3.84 and SD of 3.64 sessions. Adherence to current recommendations of care for AT (NICE, 2020), included exercise, advice and medication for pain relief in the early phases, was 92%. Only 11 patients (2%) had a completed formal patient reported outcome measure (e.g.VISA A questionnaire) within their medical notes. Reviewers extracted data relevant to patient response to treatment with a responder being identified as significant improvement in symptoms reported in the medical notes. A total of 154 patients did not have any record of clinical outcome reported. Of the 388 patients with outcome data, 332 (79%) patients were classified as responders, whilst 56 (21%) where recorded as non-responders. The remaining numbers comprised of 'Did Not Attend discharges' or 'COVID stopped treatment'.

Discussion

This is the first UK data describing typical characteristics of people seeking care within the NHS for AT.

Demographic and clinical presentation

The age of the cohort is approximately 10 years older than participants in previous AT studies (Lyng et al., 2024). Greater age may impact AT with findings of low grade inflammatory pathways (Lui & Yung, 2021), epigenetic changes influencing collagen turnover (Riasat et al., 2020), or more simply, the greater likelihood of reduced physical activity and co-morbidity (Addison et al., 2012).

The BMI for patient participants in this study was significantly higher than the UK national average, with the majority of the patients being overweight or obese (NHSE, 2021). The increased BMI may be an aetiological factor which has a role in systemic inflammation (Heir and Eide, 1996; Millar et al., 2010; Bagge et al., 2011; Millar et al., 2013; Dean et al., 2015) and associated with the pathogenesis of tendinopathy. (Gaida, J. et al., 2009; Gaida, J. E. et al., 2009). Weight loss can reduce these factors

(Ryan and Nicklas, 2004) and could therefore be an important factor in tendinopathy management for people living with obesity, however, this is currently not part of accepted clinical practice guideline recommendations (Heir and Eide, 1996).

The most common site for pain was the mid-portion Achilles, consistent with previous studies (de Vos et al., 2021). The finding of both insertional and mid-portion symptoms observed in some of the patient participants in the current study has not been reported in the published literature, however, this needs consideration as a clinical presentation. There is a possibility that a finding of pain in two regions of the Achilles may be a greater clinical challenge (Cook et al., 2018).

Symptom duration within the population appears to be in keeping with the general literature but does highlight the potential long-term nature of AT with 18.9% experiencing pain for longer than 2 years. Long-term follow up data in AT has suggested symptoms persist past 10 years in 20% of patients. (Lagas et al., 2022).

Medical conditions

The data identifies that hypertension, cardiovascular disease, diabetes, respiratory disorders, neoplasm, rheumatological and obesity are all more frequently identified in the population with AT compared to the general population. Respiratory conditions (COPD or asthma) were 8 times greater. than in the local area. The observed association, of increased prevalence, of many of these diseases alongside AT may relate to either lifestyles associated with the disease i.e. inactivity and poor physical fitness impacting tissue quality or may in fact be related to medications associated with these diseases that influence tendon health, e.g. inhaled steroids. (Kirchgesner et al., 2014; Knobloch, 2016).

Hypertension affected the largest number of patients and was twice as common compared with the local area. No previous research has shown this association with tendinopathy, and the direction of this relationship is unclear, although some anti-hypertensives have been implicated in the aetiology of tendinopathy. (Kirchgesner et al., 2014; Knobloch, 2016).

Importantly, other MSK conditions were present in 59% of the group with AT. Often people with co-morbidities which include MSK disease are routinely excluded from research studies examining interventions for tendinopathy. Many of these co-morbidities are likely to influence the natural history of AT and patient outcomes following rehabilitation (Versus Arthritis, 2021). These differences in outcomes may be due to patient's adherence to rehabilitation strategies (Phillips et al., 2024) as they are unable to complete the typical AT intervention of plantarflexor strengthening exercises as it may provoke their pre-existing knee pain, which also limits lifestyle interventions designed to increased activity.

Many of the identified medical conditions are significant comorbidities known to influence the likelihood of musculoskeletal conditions. This is commonly through an increase in systematic inflammation and the direct effect this has on soft tissue (Collins et al., 2018).
The fact the currently published literature has largely excluded patients representing NHS cohorts (people with comorbidities) makes it difficult for treating clinicians to determine what care should be utilised and the likely prognosis. It is also feasible that much of this association is directly related to medications and or physical activity/lifestyle. For example anti-hypertensives such as angiotension II blockers, Statins and fluoroquinolones have all been associated with higher risk of developing tendinopathy or tendon rupture (Kirchkesner et al., 2014).

Medication usage

The study data (table 5) identifies multiple drugs that are more frequently observed in the Achilles tendon population than in the general population. Most of these drugs directly map to co-morbidities in individual patients and it is difficult to consider medication without considering the co-morbidity.

The data supports the previously published literature, suggesting possible roles in tendinopathy for inhaled or oral steroids, angiotension II blockers, renin-angiotensin inhibitors (a family of anti-hypertensives), statins and NSAIDs and paracetamol/acetaminophen (Carroll et al., 2011; Kirchgesner et al., 2014; Knobloch,2016; Nyyssönen et al., 2018). Other drugs have been identified in the literature and our patient cohort, but it was not always possible to compare with national data (I.e. topical pain relievers and HRT). (Kirchgesner et al., 2014; Knobloch, 2016) Notably fluroquinolones where not identified within the data as particularly common, despite evidence suggesting it increases risk of symptom development by 7.9 times. (Nyyssönen et al., 2018) This may be a consequence of greater awareness of side effects and safety information or simply its relative safety or infrequent use within this population.

The mechanistic relationship between tendinopathy and many of these drugs are lacking with most studies being associative in nature and therefore unable to determine cause and effect. It seems very plausible that at least some of the risk is linked to the underlying lifestyle that predisposes to the co-morbidity – be this diet or physical inactivity.

Psychological and Psychosocial factors

Recent literature has highlighted the importance of psychosocial aspects in management of patients tendinopathy with a specific psychosocial sub-group identified in 24% patients with AT. (Hanlon, 2022) Despite this, our data only found a small level of identification of these factors with 63 psychological and 11 social factors reported in 35 (6%) patients. It seems unlikely that these factors were not present and would appear more likely that they were either not recorded or not assessed/examined by the clinicians.

Further research is needed to investigate the capacity of physiotherapists and other healthcare professionals in assessing and addressing psychological and psychosocial factors among individuals with AT as this directly effects clinical outcome. (Ivarsson et al., 2008; Mc Auliffe et al., 2022; Silbernagel et al., 2022)

Social deprivation

This service evaluation findings reveal that a significant proportion of individuals with AT in a typical NHS population come from the lowest deciles of deprivation. MSK disorders and long-term conditions disproportionately affect people from poor socioeconomic areas, minority ethnic groups and people with long term health conditions. These people are less likely to engage in exercise (Blair, 2009; Hurley et al., 2010; Van Der Zee-Neuen et al., 2017) and thus negatively impact their clinical trajectory.

This is highly relevant as it underscores the profound health disparities highlighted by initiatives such as Core20plus5 (2022), spearheaded by NHS England. To effectively address these health inequalities, there must be a fundamental shift from a prescriptive healthcare model to one that is collaboratively developed and aligned with the needs of underrepresented individuals.

National programs like ARMA's Act Now (ARMA, 2023) emphasise the necessity of co-designing interventions alongside patients, specifically incorporating perspectives from deprived communities. However, this inclusive and collaborative approach has yet to be fully integrated into the management of AT.

It is important to recognise that people living in deprived areas face multifaceted barriers impacting adherence to interventions, including various psychosocial elements, the burden of multiple health conditions, socioeconomic disadvantages, limited educational opportunities, reduced physical activity levels, negative past experiences with exercise, and inadequate support systems. People facing these barriers have been shown to obtain poor functional outcomes following AT exercise treatment compared to those without (Visser et al, 2022). This adherence gap poses a significant threat to rising inactivity, contributing to one in six deaths and incurring an annual cost of £7.4 billion in the UK (Brace et al., 2022).

Imaging, Clinical outcomes and effectiveness

Imaging

The justification for imaging in the 20% who received it and how it informed clinical care was not reported. The data shows a large variation in reported standards and terminology of the imaging. This needs consideration in order to reduce the potential for the language used to induce fear and concern within the patient groups and potential confusion in clinicians managing the patients (Stewart and Loftus, 2018; Scott et al., 2020). Standardisation of reports would be useful to ensure clinicians know all potential tissue pathology has been considered alongside important prognostic indicators. (Rio et al., 2020; Dalili et al., 2021)

Pain rating

As with most MSK conditions, pain is the major complaint of patients with AT. Within this service evaluation 80% of individuals with a reported pain score were greater than 5/10. A recent review on persistent pain found that people with MSK conditions who report higher pain and disability at the start have worse clinical outcomes, (Valentin et al., 2016; Artus et al., 2017) however no research has examined this in relation to AT.

Physiotherapy usage

Patients were seen on average of 4 sessions with a local estimated cost per patient of £200. This is lower than the CSP review that indicated an average cost per patient Physiotherapy episode of £461.13. (Chartered Society of Physiotherapy, 2012) However, there was a large variation in this service evaluation with some patients having up to 31 Physiotherapy sessions (approximately £1550) highlighting the large variance in needs of patients with AT.

Clinical outcomes

Clinical outcomes identified a large number of records without outcome information and a very small number with any validated outcome measure. Responders appeared to make up a large proportion of individuals with outcome data present however this was only 58% of the whole review and relied on subjective data in patient notes.

Validated outcome measure

The service evaluation has revealed some critical issues within physiotherapy that we feel is representative of normal clinical notes within primary and secondary care. This is specifically the lack of reporting of pain scores, clinical information related to the site of tendinopathy and also Patient reported outcome measures (PROMs). It is paramount that clinicians increase their use of PROMs to ensure they can measure effectiveness of local services, provide clinical commissioning groups with the data to prove effectiveness and also to improve their own care.

Further research

There is a clear need for research to be completed investigating the cause-and-effect relationship of the identified lifestyle and medical (co-morbidities and medication) conditions on the development of tendinopathy. Further research needs to determine the clinical outcomes of tendinopathy in a typical NHS setting and then refine and optimise interventions to suit this group as they are highly likely to have poorer outcomes than the typical athletic predominately white, affluent groups with higher health literacy who participate in the majority of the published research used to guide clinical care.

Conclusion

Individuals seeking treatment for AT within the NHS exhibit a distinctive profile characterised by a higher prevalence of co-morbidities, greater levels of deprivation, elevated BMI, and increased] medication usage. This unique patient cohort poses challenges in determining suitable interventions and management strategies due to their underrepresentation in existing research. The interrelation between the identified diseases, medications, and the development of AT suggests a need for further investigation to elucidate the causal relationships. The application of outcome measures is lacking. Addressing these gaps through rigorous research is critical for optimising patient outcomes within the NHS setting.

Implication for clinical practice

This service evaluation has revealed that the typical NHS patient with Achilles tendinopathy is older than previously noted in the literature and has higher levels of comorbidity, BMI, and medication usage compared to the local or national adult population. With up to 60% of individuals living with Achilles tendinopathy experiencing ongoing pain and functional deficits, these findings suggest a need for further research into interventions that address all individuals with Achilles tendinopathy, rather than being tailored solely to athletes.

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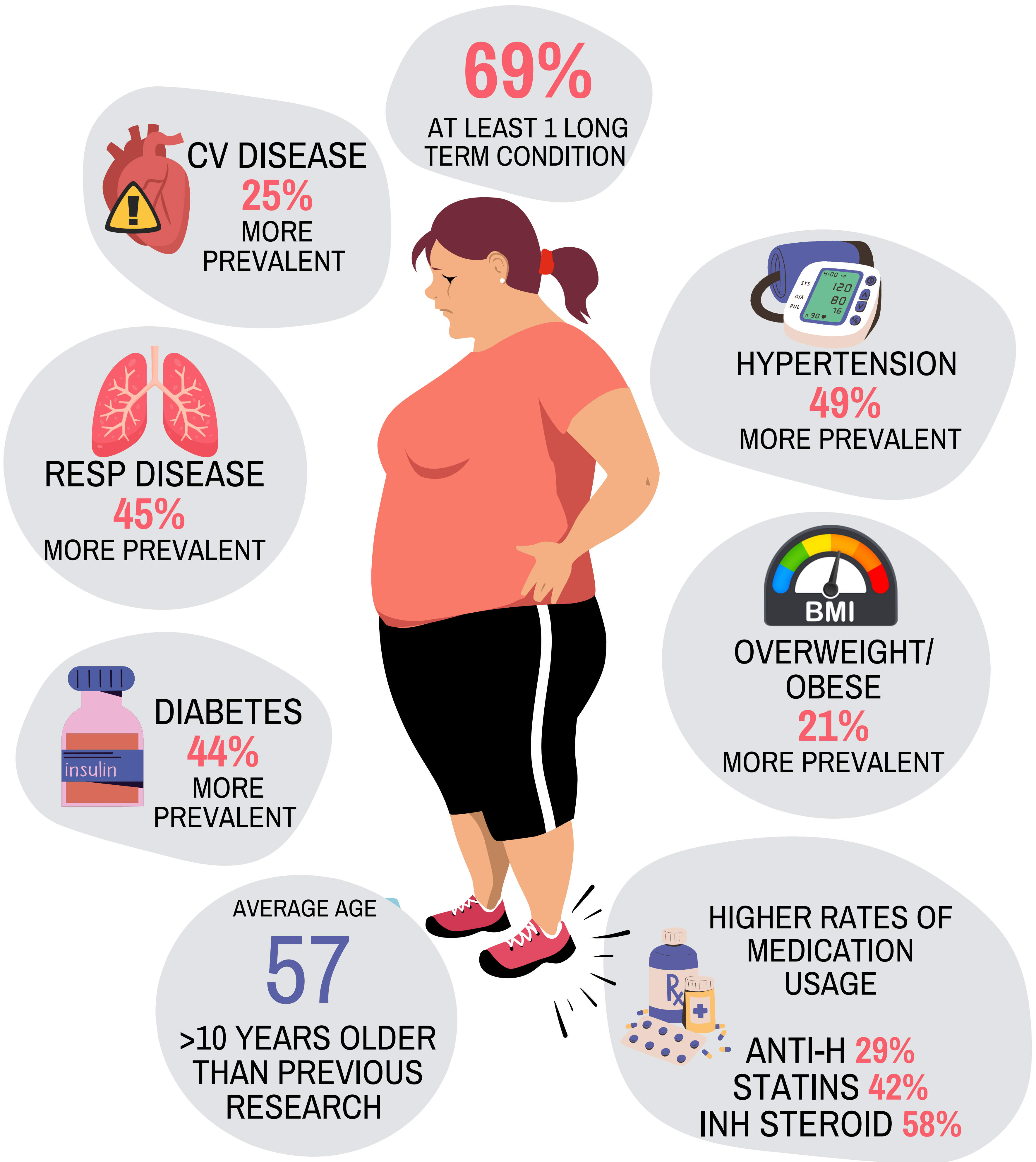
Figure 1. Characteristics of 573 NHS patients vs local or national prevalence



Conclusion: The typical NHS patient with Achilles tendinopathyis older than previously recognised in the literature and has higher levels of co-morbidity, BMI, medication usage compared to the local or national adult population