

Papers

Evaluation of the status of canine hydrotherapy in the UK

M. Waining, I. S. Young, S. B. Williams

To establish the current status of canine hydrotherapy in the UK and to ascertain information regarding the current use of hydrotherapy, a questionnaire was sent to 152 hydrotherapy centres throughout the UK, from which 89 responded. Hydrotherapy was found to be a rapidly growing business. Stand-alone centres were in existence; however, many centres were connected to other businesses, including boarding kennels and general practice veterinary surgeries. The dogs using the facility were mainly pedigree breeds, particularly labrador retrievers (30 per cent), and the most commonly encountered conditions were rupture of the cranial cruciate ligament (25 per cent), hip dysplasia (24 per cent) and osteoarthritis (18 per cent). The proportion of qualified versus unqualified staff varied between centres, highlighting a need for improved regulation of this aspect of the industry. However, all the dogs treated by the hydrotherapy centres surveyed were direct veterinary referrals, suggesting a good degree of professionalism in the field and a high regard for the benefits of hydrotherapy.

HYDROTHERAPY – the use of hydrotherapy equipment combined with the skilled manipulation of a trained therapist – is a natural form of rehabilitation, which is increasingly used as part of a physiotherapy programme or as a rehabilitative therapy by itself.

It has been suggested that hydrotherapy in rehabilitation can improve muscular strength and endurance (promoting a return to normal function), cardiorespiratory endurance, range of movement (ROM), balance, joint mobility and function, while decreasing pain, muscular spasm, oedema and joint effusion (Speer and others 1993, Bravo and others 1997, Johnson and others 1997, Marsolais and others 2002, 2003, Monk 2006). Because of the resistance of water, heart rate and oxygen uptake are increased greatly during exercise, allowing the subject to expend the same amount of energy at lower speeds (Whitley and Schoene 1987, Hall and others 1998). Furthermore, the effect of buoyancy decreases weight bearing, which may help to reduce pain (Speer and others 1993). Prevention of high-impact actions may minimise soft-tissue damage and inflammation, both of which can impair healing and be particularly problematic in overweight patients and those with painful musculoskeletal conditions (Marsolais and others 2002).

There are various existing forms of hydrotherapy. Pools are the most straightforward and cost-effective piece of equipment. Swimming allows for a hands-on approach that a therapist may use to alter the way

a dog is exercising a limb and it is possible to use toys to increase owner interaction. When a dog can swim confidently, jets may be employed to increase resistance and the level of work. A jacuzzi (spa) system may also be added to provide a cool down at the end of sessions or as a method to provide muscle relaxation. Underwater treadmills (UWTMs) are also commonly used. They are smaller than pools but generally more expensive and require more maintenance. The greatest advantage of an UWTM is that it allows a therapist to easily control speed, water level, incline and temperature so that each session can be tailored specifically for the needs of the patient. They also allow the therapist to observe limb movements and assess progress.

Canine hydrotherapy is becoming more widespread as more owners seek out alternative therapies and methods of rehabilitation to aid their pet's recovery and maintain its health. Additionally, there may now be heightened perception of the positive effects that hydrotherapy and other alternative therapies may bring, despite a current lack of evidence-based research in this field. The aim of this study was to quantify the growth of the hydrotherapy industry, the distribution of hydrotherapy equipment in general and speciality centres, the qualifications of staff currently practising in hydrotherapy, and the ailments that prompted therapy. The authors also considered how hydrotherapy is currently being used within the UK with respect to the facilities available and the clientele of these establishments.

Materials and methods

A postal questionnaire was sent to a sample of 152 UK-based hydrotherapy centres, which constituted all those found using an online directory (www.yell.com). Eighty-nine questionnaires were returned within the allotted month and the data were collated. Centres were asked to provide information regarding the facilities and clientele of their establishment, including how long they had offered hydrotherapy, what other services were provided, the qualifications of the therapists, what equipment the centre had available, how many clients were seen per week, the most common breeds of dog seen and conditions treated, and the proportion of clients referred by a veterinary surgeon. Data for the five most common breeds and conditions seen were collated using a points system from 1 to 5, with 5 being the most common breed or condition. Qualifications of the staff were split into three categories: professional qualifications, encompassing degree-

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TABLE 1: Total (%) and mean number of clients per centre per week for each hydrotherapy business type

	Boarding kennels	Grooming	Pet shop	Rehabilitation	Stand alone	Training	Vets	All
Total	713 (21)	221 (6)	95 (3)	1184 (34)	768 (22)	155 (4)	312 (9)	3448
Mean per centre	32	37	48	54	40	78	18	39

TABLE 2: Total (%) and mean number of clients per centre per week for each type of hydrotherapy facility

	Pool	Pool and spa	Pool and treadmill	Pool, spa and treadmill	Treadmill	All
Total	1531 (44)	222 (15)	5296 (19)	640 (15)	529 (6)	3448
Mean per centre	34	48	58	48	20	39

level or higher qualifications (eg, veterinary nursing or physiotherapy); other qualifications (eg, Business & Technology Education Council national diplomas or National Vocational Qualifications); and no nationally recognised qualifications.

Profitability

Profitability estimates were calculated for different categories of centre by combining previously published estimates (Molyneux 2004) with additional information gathered regarding client numbers in the present study and estimates of staff costs. Staff costs were estimated based on the current national minimum wage (£5.73 per hour in September 2009) (Low Pay Commission 2010), two hours of therapist time to every hour of swim time (to cover factors such as the time the therapist was in the water as well as showering/drying, collecting money, paperwork, water management, etc), plus 10 per cent added for National Insurance costs.

Results

Respondents

Of the centres that responded to the questionnaire, the majority were located in the north Midlands and south-east England, but there was at least one centre in every county. Most centres were found to be located near to, but not within, cities. Of the centres from which a questionnaire response was not received, a similar distribution was observed, with the majority of non-respondents being located in the southeast and the Midlands. Of these non-responding centres, the vast majority were stand alone or connected to a veterinary surgery.

Industry overview

The number of canine hydrotherapy centres has increased rapidly over the last decade (Fig 1). The majority of centres surveyed were facilities within boarding kennels and rehabilitation centres (both 25 per cent). Twenty-one per cent of centres were stand-alone hydrotherapy facilities, and 18 per cent were linked to veterinary practices. The rate of increase of each type of facility is shown in Fig 1a.

Centres with only hydrotherapy pools appeared to comprise the majority of the industry (53 per cent) (Fig 1b), while all other types of centre were equally represented in the sample (12.5 per cent). UWATMs were not present in centres opening before 2004; centres running just an UWATM have become increasingly common since this time.

Clientele

The weekly number of clients varied considerably depending on the business type and facilities available (Tables 1 and 2). The facilities surveyed reported a sum of 3448 clients in an average week, which corresponds to a mean of 39 clients per week per centre. All centres that responded stated that they asked clients for a letter of referral from a vet before commencing therapy. Rehabilitation centres reported the highest proportion of clients (34 per cent) and the second highest mean number of clients per week (54). Hydrotherapy facilities linked with training businesses saw the highest number of animals per week (78). Facilities linked with veterinary practices saw the lowest mean number of clients per week (18).

Centres that only had a pool received most (44 per cent) of the industry's business, although, per centre, they did not see a high number of clients per week (34). Centres with both a pool and UWATM saw the

highest mean number of clients per week (58); however, those with UWATMs alone saw the lowest number of clients per week (20). The proportion of business created by non-therapeutic 'fun swims' was low in all types of centre, but accounted for a higher percentage of business in those with hydrotherapy pools (11 per cent) and in those connected with boarding kennels, pet shops and training centres (11, 11 and 15 per cent, respectively). Fun swims

only accounted for 4 per cent of the business of centres connected to veterinary practices.

Labrador retrievers were the most common breed observed in hydrotherapy centres, representing 30 per cent of dogs seen (Fig 2a); this was twice as many as 'other retriever types' (mainly golden retrievers), the second most common group (15 per cent). Nine breed types accounted for the majority of all dogs seen by hydrotherapy centres (Fig 2a).

The most common conditions referred to hydrotherapy centres for rehabilitation were rupture of the cranial cruciate ligament (RCCL) (25 per cent) and hip dysplasia (24 per cent), which together accounted for nearly half of all cases (Fig 2b). Osteoarthritis was also highly represented (18 per cent).

Staff qualifications

Hydrotherapy facilities linked with veterinary surgeries had the highest percentage (82 per cent) of staff with professional-level qualifications (eg, veterinary science, veterinary nursing and physiotherapy) (Table 3). The majority of staff in stand-alone facilities and those linked with boarding kennels and grooming parlours had no nation-

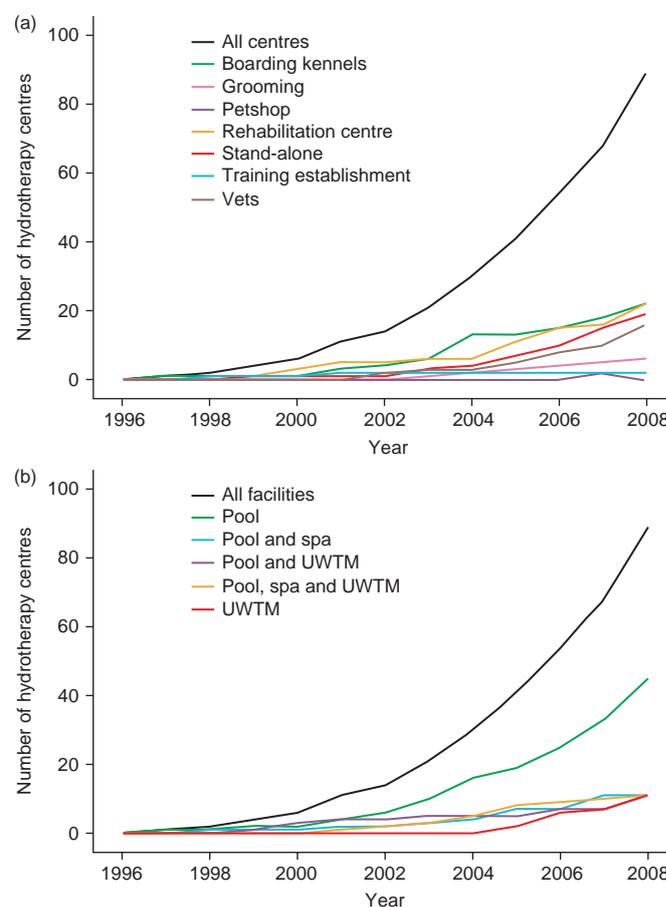


FIG 1: Growth of the UK hydrotherapy industry by (a) business type and (b) facilities present. 'Year' denotes the year the centre opened, UWATM Underwater treadmill

TABLE 3: Percentage of staff with professional, no nationally recognised qualifications and other qualifications by business type

	Boarding	Grooming	Pet shop	Rehabilitation	Stand alone	Training	Vets	All
Professional qualifications	18	25	100	38	27	17	82	39
No nationally recognised qualifications	77	67	0	36	62	33	16	49
Other qualifications	5	8	0	26	11	50	2	12
Total	100	100	100	100	100	100	100	100

ally recognised qualifications (62, 69 and 67 per cent, respectively). Staff with 'other' qualifications represented a low percentage at most centre types but were more common in rehabilitation (26 per cent) and dog training centres (50 per cent).

Discussion

Canine hydrotherapy is becoming increasingly popular, with strong growth in a number of centres across the UK. There has been a steady increase in the number of canine hydrotherapy centres over the last 10 years, with an increase in the number of stand-alone centres as well as veterinary practices and rehabilitation centres opening hydrotherapy facilities. The growth in the number of facilities attached to veterinary practices and rehabilitation centres suggests that practitioners are adopting aquatic therapy as part of an animal's treatment regimen. The growth in the sector as a whole may suggest that hydrotherapy is becoming increasingly popular and/or lucrative.

The prevalence of pool-only centres may be a result of the relatively low installation cost and maintenance overhead. However, pools see a lower mean number of clients per week than centres with more facilities. This may be because some are 'hobby-pools' or they are secondary to another business such as a boarding kennels or pet shop. In the past five years, centres with other types of equipment have become more common, especially those with UWMTs.

More non-respondents fell into the categories of stand-alone centres and those attached to veterinary practices, which may mean that they were underrepresented in the present study. The selection process may have contributed to underrepresentation of hydrotherapy facilities linked to general veterinary practices, since some veterinary practices do not advertise as independent hydrotherapy businesses. However, the results are representative of the overall population, with a wide distribution in centre locations and types.

Estimated profits of centres ranged from -1.1 to 14.7 per cent, depending on centre type (Table 4). Based on the authors' assumptions, UWMT centres appeared to be particularly unprofitable (-1.1 per cent). This may not be entirely accurate as most centres with just an UWMT were connected to vets - who may reduce staff costs by using existing nursing staff to run the centre as needed to swim their clients' animals, meaning the centre does not need its own staff. However, it was not the authors' intention to comment in detail on the economics of centres.

All centres that responded to the questionnaire stated that they insisted on a veterinary referral before commencing treatment. This indicates that good practice was being followed within the sector despite no formal regulation or regulatory body, and that veterinary surgeons are now commonly referring dogs for

hydrotherapy. It should be noted, however, that it was not possible to verify whether or not this was the case.

The number of clients a centre sees per week could be seen as an indication of how successful and well run the business is, but this may also be affected by a variety of issues such as session length, whether the hydrotherapist is involved in dog showering/drying post-session or whether the owner is requested to do this themselves. It is also not unknown for some centres to swim more than one dog at a time, which would increase the number of dogs they were capable of swimming per day. However, this would have an increased safety risk and was not enquired about in the present study. In centres such as this the number of clients seen per week would not reflect on the quality and safety of the treatment.

The proportion of breed types that were most commonly treated in hydrotherapy centres did not reflect the UK dog population (PFMA 2009), which may be due to certain breed predispositions to injury. Other factors that may have influenced the breeds of dogs undertaking hydrotherapy include the disposable income of owners and any association between an owner's assets/income and the dog they own. Labrador retrievers were the breed most commonly seen by centres, representing 30 per cent of all dogs (Fig 2a); although labrador retrievers are also the most popular dog breed in the UK, they only comprise 8.2 per cent of the overall dog population (Pet Food Manufacturers Association [PFMA] 2009) and so they are over-represented in hydrotherapy centres. This may reflect this breed's susceptibility to certain musculoskeletal conditions, or its reputation as a good swimmer.

Other breeds such as the border collie were represented in centres almost equally to their proportion within the UK dog population (9 per cent v 8.2 per cent, respectively), while some breeds such as the Jack Russell terrier were under-represented (6.8 per cent of the population, but only 1 per cent of the dogs seen in hydrotherapy centres). Cross breeds were not commonly seen in hydrotherapy centres, representing less than 3 per cent of dogs (Fig 2a), despite representing one-quarter of the UK's dog population. This suggests that cross-bred dogs might be less likely to develop the types of conditions for which hydrotherapy can be used as a treatment or that they may generally reside in households that are not financially able/willing to invest in hydrotherapy. A brief exploration of pet insurance companies suggests that in general they will cover up to £750 in alternative therapies per year for a dog. This amount would not cover a dog swimming every

TABLE 4: Estimated profitability of canine hydrotherapy facilities in the UK

	Hydrotherapy pool	Pool and spa	Pool and UWMT	Pool, spa and UWMT	UWMT
Average number of therapists	2	2.5	4	3	3
Costs (£)					
Heating	800	800	1600	1600	800
Chemicals (cleaning and water balance)	350	350	700	700	350
Staff costs (swim supervision, cleaning and maintenance)	22,300	31,460	38,000	31,450	13,110
Repairs and renewals (replacement pumps, switches and heaters)	500	500	1000	1000	500
Insurance (additional building outside main surgery)	250	250	250	250	250
Advertising (colour brochure)	250	250	250	250	250
Bank interest (£35,000 loan over 10 years)	2640	2640	2640	2640	2640
Total	27,090	36,250	44,440	37,890	17,900
Number of clients/week	34	48	58	48	20
Income (£)					
Clients/week	35,360	49,920	60,320	49,920	20,800
Minus VAT	30,100	42,500	51,350	42,500	17,700
Profit (£) (%)*	3010 (10)	6250 (14.7)	6910 (13.5)	4610 (10.8)	-200 (-1.1)

* Percentages expressed as percentage of net income
UWMT Underwater treadmill

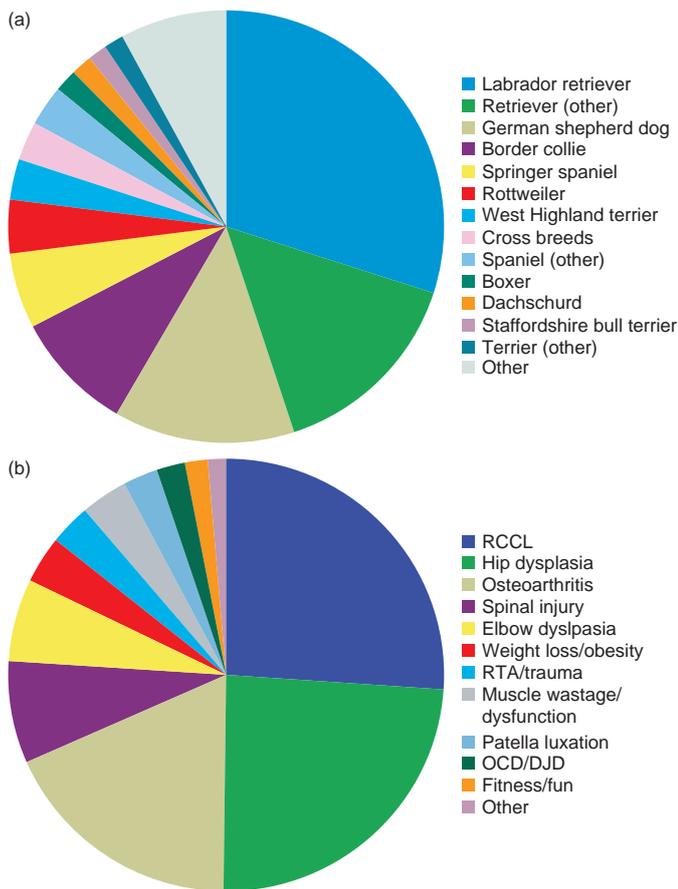


FIG 2: Distribution of common (a) and (b) conditions of animals attending hydrotherapy centres. DJD Degenerative joint disease, OCD Osteochondrosis, RCCL Rupture of cranial cruciate ligament, RTA Road traffic accident

week, and so the likelihood of owners having to fund some of their dog's therapy themselves is high.

The most frequently cited reason for referral to centres was RCCL; this is not surprising as it is the most commonly diagnosed stifle joint injury of dogs (Johnson and others 1994). Both RCCL and hip dysplasia are common, with some breeds (eg, the labrador retriever) often being predisposed to them (Sargan 2009). Dogs with osteoarthritis were also commonly seen, which may highlight the perceived benefit of hydrotherapy for retaining function and mobility, particularly for older animals. Weight loss/obesity treatment accounted for a relatively small proportion of referrals for hydrotherapy (Fig 2b). Obesity has been shown to be an increasing problem in domestic animals. Veterinary surgeries have estimated a prevalence of 30 per cent in dogs (McGreevy and others 2005, Bland and others 2010) and the labrador retriever is considered to be one of the most susceptible breeds (Clements and others 2006). Hydrotherapy may be an under-used therapy for combating obesity.

Fifty-one per cent of staff in the hydrotherapy facilities surveyed had some form of training (Table 3). However, 49 per cent of the staff in the centres surveyed had no nationally recognised qualification, and such individuals formed a larger proportion of the staff of centres linked to boarding kennels (77 per cent), grooming parlours (67 per cent) and stand-alone centres (62 per cent). Those staff with professional qualifications formed a smaller percentage in most centres except in those connected with vets (82 per cent) or pet shops (100 per cent – although there were only two such centres). Centres linked with vet practices may have a high number of staff with professional qualifications since such centres are likely to be run or overseen by the practice's own vets and nurses.

For aquatic therapy to be beneficial, it must be performed correctly; furthermore, incorrect use of such therapy could result in worsen-

ing an injury/condition. If joints are repeatedly stressed and unstable, this can lead to osteoarthritis, which leads to pain and discomfort in the patient and therefore decreases its quality of life (Millis and Levine 1997). Therapists should have a good working knowledge of anatomy and also some medical knowledge, especially regarding emergency procedures and first aid. The present study suggests that an extremely broad range of qualifications are present within the hydrotherapy industry. Given the importance of ensuring that staff have appropriate skills and knowledge, it would be beneficial for there to be some guidelines, or preferably regulation, regarding the training and qualifications necessary to work in the field. An organisation such as the RCVS, the Association of Chartered Physiotherapists in Animal Therapy (ACPAT) or the Institute of Registered Veterinary and Animal Physiotherapists (IRVAP) would be most suited for this role. Further discussion and analysis should take place in order to develop a minimum recommended level of training for canine hydrotherapists.

Canine hydrotherapy is showing considerable levels of growth and is becoming an increasingly popular addition in veterinary practices and a variety of other businesses throughout the UK. The fact that all centres that responded to the present survey insisted on a direct veterinary referral before commencing treatment suggests a good degree of professionalism within the sector. However, since the facilities available and training of staff vary considerably, owners and referring vets should spend time researching centres to find out which would best suit their needs and to locate skilled hydrotherapists with up-to-date practices, as well as checking the accreditations of local centres.

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