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Article in *Journal of Plastic Reconstructive & Aesthetic Surgery* · December 2013

Impact Factor: 1.42 · DOI: 10.1016/j.bjps.2013.12.015

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A cross-sectional study of the presence of United Kingdom (UK) plastic surgeons on social media[☆]

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Received 15 July 2013; accepted 16 December 2013

KEYWORDS

Social media;
Technology;
Patient education;
Public relations

Summary *Introduction and aims:* To determine the uptake and usage of websites and social media (SM) by UK consultant (attending) plastic surgeons.

Methods: Professional profiles of full BAPRAS members were searched on Facebook, Twitter, LinkedIn, RealSelf, YouTube, ResearchGate in May 2013. Additional surgeons were identified from the follower lists of @BAPRASvoice and @BAAPSMedia. Website ownership was determined on Google. Searches were repeated three times. Dual BAAPS-BAPRAS members were identified from www.baaps.org.uk.

Results: There were 156 (48.3%) dual BAAPS-BAPRAS members and 36 BAPRAS-only members. Fifty seven (18%) surgeons had no account on any platform whereas 266 (82%) were on at least one platform. One hundred and sixty four (51%) had personal websites whilst 37 (11%) had profiles on partnership websites. One hundred and sixteen (36%) had no website presence whilst 2% had websites under construction. The platform most surgeons use is LinkedIn (52%) whilst smaller proportions used Facebook (4%) and Twitter (22%). Surgeons had a mean of 126 (range: 0–3270) Twitter followers and 368 (range: 7–3786) fans/‘likes’ of their Facebook profiles. Time spent in postgraduate practice was not predictive of website ownership or SM use. However, dual BAAPS-BAPRAS members were significantly more likely to own a personal website, Twitter, RealSelf and YouTube accounts.

Conclusions: There has been an increase in the uptake of social media by UK plastic surgeons, especially in those with aesthetic surgery interests. However, very few surgeons have

* Presented at winter BAPRAS 28 November 2013 Dublin (Poster) and BAAPS 26 September 2013 London (Oral).

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optimised their web presence. Continued education and appropriate usage guidance may promote uptake, particularly by reconstructive surgeons.

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Introduction

Plastic surgery traditionally adopts new technologies early. New technologies such as social media (SM) may enhance surgical practice and should therefore be explored. Professional plastic surgery societies have led by establishing active multi-platform SM presence. However, few studies have comprehensively examined the use of SM by individual plastic surgeons.^{1–4} The sole UK study found that, in 2011, 36.2% of plastic surgeons used social networking.¹ However, this study had a low response rate of 16.3% and may not be representative.

The present study primarily investigated the presence of UK accredited consultant plastic surgeons (attending surgeons elsewhere) on popular social and professional networks using a representative sample. A representative sample was obtained by including all full British Association of Plastic, Reconstructive and Aesthetic Surgeons (BAPRAS) members, the largest UK plastic surgery association. Membership of BAPRAS is only permissible following admission to the specialist register (board certification). A secondary aim was to determine whether additional British Association of Aesthetic Plastic Surgeons (BAAPS) membership predicted SM or website use. Members of either organisation may work only as NHS surgeons, may work in both the National Health Service (NHS) and in private practice, or may exclusively work privately. The vast majority of UK aesthetic procedures are performed privately. Other determinants of SM and website usage were also explored.

Methods

Full BAPRAS members were identified from <http://www.bapras.org.uk> in May 2013. BAAPS membership status was recorded from <http://www.baaps.org.uk/>. Each surgeon's year of first qualification was recorded from the General Medical Council (GMC) register (www.gmc-uk.org/doctors/register/LRMP.asp). Surgeons' "personal websites" (those owned by a single surgeon) were searched on Google. The presence of Addthis.com sharing plugins, Twitter news feeds and direct links to the owner's Facebook, Twitter and LinkedIn accounts on personal websites was noted. Surgeons listed solely on "partnership websites" (websites run by two or more surgeons but not belonging to private healthcare organisations/hospitals) were noted.

Surgeons were searched on Facebook, Twitter, LinkedIn, RealSelf, ResearchGate and YouTube. Only the most recently updated and complete account was included for surgeons with more than one profile. Surgeons not found on direct platform searches were also searched on Google. Searches were designed to return professional profiles only. Additionally, 'follower' lists of @BAPRASvoice and @BAAP-SMedia were manually searched. Searches were performed

in one 24-h period to achieve cross-sectionality. Searches were repeated three times.

Details of each Facebook, ResearchGate and LinkedIn profile were noted. To exclude personal accounts, only Facebook business/fan pages were included.⁵ Twitter activity was analysed using twanalyst.com.

Chi-square tests were used to examine the difference in SM ownership between dual BAAPS-BAPRAS members and BAPRAS-only members. *T*-tests were used to compare means.

Results

There were 323 full BAPRAS members. Of these, 165 (51%) had personal websites whilst 37 (11%) were profiled on partnership websites (Figure 1) and five (2%) had websites in development. One hundred and sixteen (36%) had no website presence. The mean time in postgraduate practice between those with and without personal websites was similar (26.6 and 27.7 years respectively, $p > 0.05$).

The presence of surgeons on SM is summarised in Table 1. Only fifty-seven (18%) surgeons had no account on any platform. The mean time in postgraduate practice for surgeons with no SM subscriptions and those with at least one subscription was similar (26.8 and 27.2 years respectively, $p > 0.05$).

BAPRAS-only versus dual BAAPS-BAPRAS members

One hundred and fifty six (48.3%) surgeons were dual BAAPS-BAPRAS members. The remaining 167 (51.7%) were BAPRAS-only members. Dual BAAPS-BAPRAS members were significantly more likely to own personal websites than BAPRAS-only members (66 versus 36.5%, $p < 0.0001$) (Table 2). Dual membership holders were also more likely to own Twitter, RealSelf and YouTube accounts ($p < 0.05$). No difference was seen in LinkedIn, Facebook and ResearchGate account ownership ($p > 0.05$). Only 36 actively practicing plastic surgeons were BAAPS only members.

Social media plugins on websites

Of 165 surgeons with personal websites, 24 had direct links to Facebook accounts, 16 to LinkedIn and 27 to Twitter: four of whom had Twitter news feeds on their websites (Figure 2). Ten websites (6%) had Addthis.com plugins.

Analysis of LinkedIn accounts

With 168 surgeons, LinkedIn was the most subscribed platform. The mean number of connections was 106 (range: 0–500). The mean number of endorsements was 32 (range:

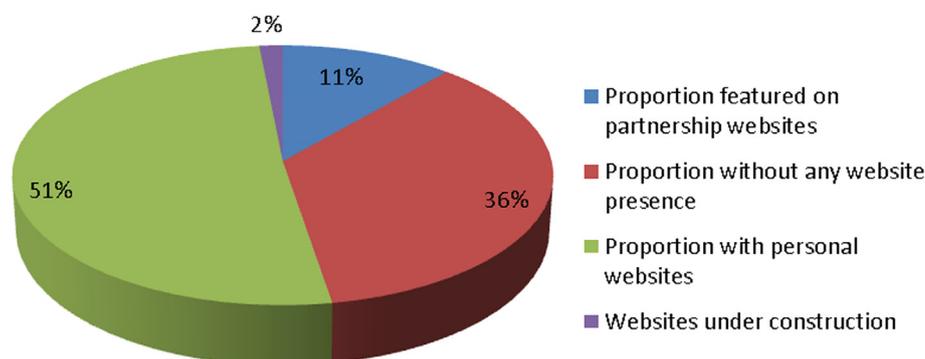


Figure 1 Pie chart showing the proportion of surgeons with and without personal websites, as well as the proportion of those without personal websites but with partnership websites.

0–657). Thirty-eight surgeons (22.6%) had completed a profile summary.

Analysis of Twitter accounts

Twitter had the second highest number of subscribers (72/323) of which 27 (37.5%) had linked their profiles to their websites. The mean number of tweets per surgeon was 216 (range: 0–4702). The mean number of followers per surgeon was 126 (range: 0–3270). The mean number of accounts being followed by each surgeon was 90 (range: 0–3082). Surgeons posted a mean of 0.26 tweets/day (range: 0–3.6).

Analysis of ResearchGate accounts

Thirty-nine surgeons subscribed to ResearchGate. The mean number of followers per surgeon was 8 (range: 0–21). Surgeons followed a mean of 7 accounts (range: 0–40).

Analysis of Facebook accounts

Only 17 surgeons (5%) had solely-professional Facebook accounts. Surgeons had a mean 267 subscribers (range: 7–3786), gaining new subscribers at a rate of 0.27/day (range: 0.01–3.23).

Table 1 Presence of surgeons on different social media platforms.

Social media platform	Number (proportion) of surgeons with an account	Mean (range) of subscribers ('followers'/'friends'/'likes') per surgeon
Twitter	72 (22%)	126 (0–3270)
Facebook business/fan pages	17 (5%)	368 (7–3786)
YouTube	50 (15%)	n/a
RealSelf	19 (6%)	n/a
ResearchGate	39 (12%)	8 (0–21)
LinkedIn	168 (52%)	106 (0–500)

Analysis of RealSelf accounts

Only 18 surgeons (6%) had claimed a RealSelf profile whilst 138 (43%) had unclaimed/placeholder accounts.

Discussion

General findings

A much greater proportion of UK surgeons are now using SM than in 2011 (82% versus 36.2%).¹ The most popular networks, in order of number of subscribers, were LinkedIn, Twitter, ResearchGate, Facebook and RealSelf. Websites were also highly used, with only 36% having no website presence. Using time spent in postgraduate practice as a surrogate for age, age was not predictive of SM use or website ownership. However, membership of the aesthetic surgery society BAAPS was associated with greater SM and website use.

In 2010, only 28.2%² of US plastic surgeons used SM professionally whereas 50.4%³ did so in 2012. However, comparison of our data with US data^{2,3} and that from the previous UK study¹ are limited by our differing methodologies. These three studies were all surveys depending on

Table 2 BAPRAS-BAAPS and BAPRAS-only members with a website and presence on social media.

Platform	BAAPS-BAPRAS members (total = 156) N (%)	BAPRAS-only members (total = 167) N (%)	p Value
Website	103 (66.0)	61 (36.5)	<0.0001 ^a
Twitter	47 (30.1)	25 (15.0)	0.0011 ^a
LinkedIn	86 (55.1)	83 (49.7)	0.329
RealSelf	18 (11.5)	1 (0.6)	0.0001 ^a
YouTube	34 (21.8)	16 (9.6)	0.004 ^a
Facebook	32 (20.5)	23 (13.8)	0.144
ResearchGate	18 (11.5)	20 (12.0)	0.9

BAAPS = British Association of Aesthetic and Plastic Surgeons, BAPRAS = British Association of Plastic, Reconstructive and Aesthetic Surgeons.

^a Statistically significant difference.

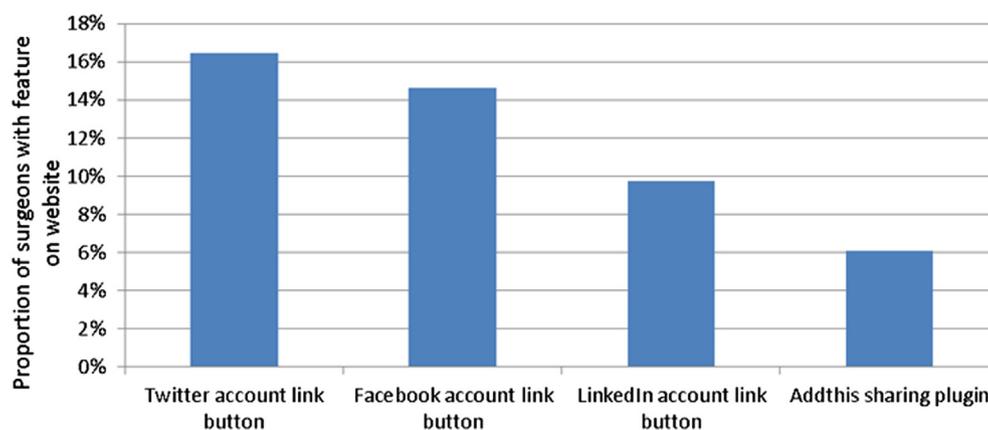


Figure 2 Proportion of surgeons with social media plugins on their websites.

high response for representativeness. Interpretation of their results may therefore be limited by the low response rates achieved: 20.8%,² 9.7%³ and 16.3%.¹ As there are 437 consultant plastic surgeons in the UK,⁶ the 323 surgeons included in this study represent 74% of the entire cohort. Also, the present study differentiated between personal and professional use, including only professional profiles. Such a distinction is not clear in previous studies.

Mass 'social' exposure versus limited professional exposure

In the UK, the most popular social network, Facebook, was the least used by surgeons (12%). Whilst our data cannot explain this finding, it may be due to a perceived lack of control over content. In reality, moderators can control postings by altering security settings. There may also be some surgeons using one profile for both personal and professional purposes and would have been excluded by our search. However, this is likely to be a minor effect as only 24.9% of US surgeons used a single account for personal and professional transactions. Thirdly, surgeons may be shunning the 'social' network Facebook, in pursuit of more "professional" exposure offered by others such as LinkedIn.

Effect of aesthetic practice on website and social media presence

Although BAAPS is an organisation representing aesthetic plastic surgeons, BAPRAS membership includes both reconstructive and aesthetic plastic surgeons. Some BAPRAS-only members may have significant aesthetic practices whilst BAAPS-only members are at liberty to take up reconstructive roles in the National Health Service and many do. There is no definitive publicly-available information describing each surgeon's practice. However, it is logical to assume that BAPRAS members with BAAPS membership as well will have greater aesthetic components to their practices. If this assumption is true, our data suggests that surgeons with greater aesthetic components to their practices are more likely to own a personal website, as well as Twitter, RealSelf and YouTube accounts. Although there was no difference in Facebook uptake,

these three platforms and Facebook are more relevant for marketing aesthetic practices. Wheeler et al. also found that American surgeons with greater aesthetic components to their practices were likely to use SM.⁶ However, as it is only an assumption that BAAPS members have greater aesthetic interests, we avoided comparing BAPRAS-only versus BAAPS-only members as this could be misleading. Also, the BAAPS-only group was much smaller than the BAPRAS-only group (36 versus 167), precluding statistical comparison.

Time-efficient web presence

Proportionally more UK surgeons used LinkedIn than US surgeons (52% versus 25%).³ LinkedIn allows surgeons to list their achievements on a free, search engine optimised website without a similar emphasis on sharing/posting as on social networks. LinkedIn's static nature, and its search engine optimisation, idealises it for surgeons seeking time-efficient web presence. This is particularly true since a lack of time, alongside concerns about professionalism, is the most cited reason by surgeons shunning SM.^{2,3} This assertion is supported by the finding that a greater proportion of UK surgeons use static websites than do any SM platform. Static websites, by definition, are less time consuming to maintain once established. However, there are proportionally more UK surgeons than there are US surgeons without websites (36% versus 8.3%).

Static versus dynamic web presence

Websites remain popular partly because patients value them. Walden et al. found that surgeons' websites were the most powerful influence on patients' choice of surgeon for augmentation mammoplasty.⁷ Websites, particularly personal ones, may accord greater degree of control over content than SM. However, since websites require patients to actively search for them, traffic may be low without costly search engine optimisation. Social media offer an alternative, free, search engine-optimised avenue and importantly, allow surgeons to communicate in real-time with potential patients and the general public. Whereas website updates may not be obvious to readers, even brief,

time-efficient SM posts are easily accessible to even unwitting recipients.

Twitter is particularly appropriate for brief communications to potentially massive audiences, giving surgeons dynamic web presence. However, relatively small proportions of surgeons use Twitter in the UK and US (14.2% and 14.2% to <25%) respectively.^{2,3} The utility of Twitter is that even this seemingly small presence and mean tweets/per day of 0.26 (range: 0–3.6) can be magnified via retweeting. For example, if the 72 UK surgeons on Twitter all posted a common educational message, it would not only reach each surgeon's 126 (range: 0–3270) followers, but also reaches the respective followers of each surgeon's follower. The number of recipients of any one message can therefore increase exponentially or 'go viral.' This unprecedented opportunity to educate through this interconnectedness is yet to be fully explored.

Diversifying uses of social media in plastic surgery

Previous groups identified that surgeons using SM the most had a largely aesthetic surgery practice.² Although much has been written about the utility of SM in plastic surgery marketing or 'public relations', surgeons derive relatively minor percentages of their practice from these websites.² The fact that a tenth of US surgeons with predominantly reconstructive practices consider SM to be of no utility suggest an under-exploration and promotion of other potential uses.³ The potential of SM as a platform for educating patients has been globally acknowledged. In 2008, this led to a partnership of the American Society for Aesthetic Plastic Surgery and Realself.com, a website which aims to educate the public about cosmetic surgery. Realself.com establishes place-holder profiles for surgeons on which patients can review their care. A small proportion (6%) of UK surgeons have claimed their accounts whereas a further 138 (43%) had unclaimed/placeholder accounts, some with potentially damaging negative reviews from patients. It may therefore be in surgeons' interests to engage with such resources.

Social media subscription may also be useful in surgeon's continued professional development. For instance, one is able to subscribe to several journals thereby receiving digested updates from several sources without active effort. Social media has also been used for collecting data for aesthetic research.^{8,9} Furthermore, surgeons can share and discuss their research with peers. ResearchGate is a dedicated networking online space for researchers and scientists ideal for this purpose. A small group of 39 UK plastic surgeons (12%) has thus far subscribed to this relatively new network. However, a recent investment of \$35 million from high profile donors including Bill Gates is likely to raise the profile of this website in the near future.¹⁰

Avoiding pitfalls whilst maximising connectedness

The potential pitfalls of SM are myriad and have been extensively discussed.^{11–15} The GMC recently published guidance for all UK doctors on acceptable SM use.¹⁶ Other Royal Colleges have also published additional guides.¹⁷ Several articles in the plastic surgical literature provide useful tips for those intending to use SM.^{11,12,18} Other

articles detail how to optimise online presence.^{5,11,15,19,20} It may also be beneficial to include SM in local teaching timetables. Apart from their utility in averting the public relations disaster of SM indiscretions on whole units, specific teaching sessions are usually well received by health professionals.²¹

Due to the real-time nature of these platforms, it may be challenging to maintain a contemporaneous profile. Plastic surgeons have already embraced smartphones,^{22,23} so installing SM apps may give surgeons greater connectivity. Alternatively, the management of their SM activity might be delegated, though this may incur overhead costs. In seeking maximum connectivity, surgeons may wish to consider linking all their various profiles. A previous study found that 6% of UK websites had Facebook links whilst 10% had Twitter links.⁴ Our results show more surgeons still link to Twitter than to Facebook (15% vs. 16%) but overall, more surgeons now have links on their websites. Only four surgeons had installed a Twitter news feed on their website suggesting a need for further education on how to maximising connectedness.

Limitations of the present study

Despite repeating searches three times, some results may still have been missed. This limitation should be balanced with the strength of this study as being the study of plastic surgeon uptake of SM with the most representative sample to date. The decision to perform an internet-based cross sectional study was informed by previous studies showing UK plastic surgeons to be sceptical of surveys, finding them an unpopular and unvalued means of performing research.²⁴

Conclusions

There has been an increase in the uptake of social media by UK plastic surgeons, especially by those with aesthetic surgery interests. However, very few surgeons have optimised their web presence. Continued education and appropriate usage guidance may promote uptake, particularly by reconstructive surgeons. Surgeons are encouraged to access the guidelines now published on fair use to ensure a positive online experience is maintained. If more surgeons describe how they have utilised SM in their practice, and the trends of usage are studied with level of detail presented here, this may encourage the appropriate uptake of these new and innovative means of communication.

Ethical approval

Not required as all data used was publicly available.

Funding

None.

Competing interests

None.

Acknowledgements

We wish to acknowledge Joseph Klimach's kind help with data collection.

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