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Abstract:-

This study reports on an empirically underdocumented practice in contemporary aesthetic enhancement culture, the self-injection of unregulated DIY Botox and dermal filler kits purchased online. Data was collected from four online discussion forums containing disclosures in relation to use of DIY kits and analysed using ethnographic content analysis. Motivation to source DIY Botox and dermal fillers online was grounded in desire to avoid financial cost of professional services and a lack of confidence in practitioners. Future intentions to order online raw materials and 'formulas' to prepare dermal fillers at home were expressed. Individuals taught themselves to inject through watching YouTube tutorials and downloading Botox injection maps from the internet. Although individuals demonstrated awareness of the health risks involved with self-injection of unregulated products, this was not a deterrent. Future research is warranted to document the injecting practices and health outcomes of individuals who inject DIY Botox and dermal filler kits to inform targeted harm reduction interventions by healthcare practitioners.

Keywords:

Aesthetic enhancement, Botox, dermal filler, injecting, internet

Introduction

Individuals who seek to change the appearance of their skin have been described as being in pursuit of a younger, 'fresher', 'healthier' appearance (1). Enhancement of the skin in recent years includes use of skin lightening creams, particularly in Asia (2) and Africa (3), tanning injectables Melanotan I, II and bremelanotide to incite a skin tan (4; 5) and the use of cosmetic injectables, such as Botox and dermal filler, to smooth and plump the skin or lips and prevent the appearance of aging. Botox is made of a bacteria (botulinum) which causes botulism, a rare and fatal disorder (1) and is injected into lines or wrinkles to freeze the nerve action in the muscles and create an unlined look, while preventing further wrinkles from forming. Dermal fillers are injectable products comprised of synthetic substances or human and animal derivatives, and are used subcutaneously to plump out the appearance of wrinkles, cheeks or lips (6). Effects can last between six and twelve months.

Policy and clinical concerns centre on the public health implications around online sourcing and DIY administration of cosmetic injectables. Conventionally injected by a trained professional in licensed premises to enhance the skin and combat the signs of aging, self-injection of Botox and dermal fillers by lay people in the home environment has emerged in the past decade. Although prevalence of use is unknown, use of these DIY kits was initially documented in editorials (7; 8) which warned of rampant counterfeiting in the online market for these injectables, often manufactured illicitly in China, and the potential associated harms. Other performance and image enhancing drugs (PIED), such as human growth hormone (hGH) and tanning injectables Melanotan I & II, sourced from unregulated sellers have been found to be counterfeit, mislabelled and contaminated in previous studies (9; 10; 11). Health risks from the injection of counterfeit Botox are particularly high, as associated incidences of fatal botulism have been documented in the clinical literature (12; 13). However, the injecting practices of people who self-inject Botox and dermal filler are unknown.

Injecting harms found in groups who inject PIED include bloodborne viruses such as HIV and Hepatitis C, and skin and soft tissue infections (14; 15; 16) and may potentially transfer into DIY cosmetic injection by lay persons. Improper injecting technique of dermal fillers, for example, is

linked to infection and injury (1). Additional health harms which have been associated with the use of dermal fillers include migration of the filler, inflammation and the area injected becoming misshapen or deformed (17).

The research reported in this paper is one of the first empirical studies to describe the use of unregulated DIY dermal filler and Botox kits sourced from online sellers.

Method

An online study was conducted which aimed to describe the use of DIY botox and dermal filler phenomena as discussed on internet forums. This observational research methodology is particularly useful in the study of people who use PIED, as it provides anonymity for individuals posting on forums and provides access to rich data in publically available online sites (18).

Systematic internet searches were conducted using specific key words relative to generic, brand and “street names” of Botox and dermal filler (see Table 1) in combination with the word forum. Initial searches yielded 2,081,527 hits. Within the first thirty pages of hits there were 79 websites containing the search terms.

Insert table 1 here

Each website was then scrutinised according to specific inclusion and exclusion criteria. Duplicates, websites which were not in the English language, websites which did not have a specific focus on the non-medical use of Botox and dermal filler in the general population and which did not contain discussion forum activity were excluded (n=68). Eleven forums remained when exclusion criteria were applied. The top five of these with the most traffic (highest number of posts and members) were selected for analysis. In terms of online research ethical considerations, (19), one forum rejected permission for the research team to view its posts, and was excluded. Four forums remained for analysis. These were all publicly accessible through Google Search.

Online forums which are open and accessible to anyone with an internet connection can be seen as a public space and therefore open to observation (20). In order to uphold observational status, no contact was made with forum discussants (21; 22). Identifying details of forum participants i.e. IP addresses, placenames, names and aliases, were not collected, or were removed. This included pseudonyms, and names of selected forums, in recognition of the potential value of online identities in the offline world (20; 23).

The first 25 threads from each relevant sub fora within these four remaining fora were downloaded in addition to a key word search across each site. Initial downloaded threads totalled 2030 in relation to Botox and dermal fillers. For the purposes of this study, posts dated older than 2014, incomprehensible text and data not relative to injecting use of DIY Botox and dermal filler kits were removed (n=2000). Thirty threads remained. The final data set of records was stored in an online, password-protected computer in an NVivo software file.

Ethnographic content analysis was then conducted on the online discussion forum posts. Ethnographic content analysis focuses on the situations, context and meanings of narratives as experienced by the human actors and speakers involved (24). Content analysis was conducted through repeatedly reading posts and identifying emergent themes which were then coded using NVivo software. The initial stage of coding data was informed by the prior theoretical concepts and keyword searches, derived from the extant literature, which had guided data collection. Data was organized into structured categories based on these prior categories, and also incorporating new categories which emerged from the text. This initial coding framework was then refined to a higher level of abstraction through a further stage of coding, which through identifying similarities in categories and the use of reflexive notes, incorporated novel themes (25).

Results

The experiences of people who inject DIY Botox and dermal filler kits were published on public internet discussion forums. A detailed demographic profile of forum discussants cannot be presented

here, due to the sporadic nature of details such as gender and age given, a lack of verifiable information, and duplicate screen pseudonyms. However, it was typical for forum discussants injecting DIY Botox and dermal fillers to self-identify as female in posts, through use of statements such as “As a female...” Five themes emerged from the data and are illustrated with quotations.

Theme 1: Motivation to self-inject DIY Botox and dermal filler kits

Motivation to source DIY cosmetic injectables was discussed within the forum as being grounded in improving appearance of lines and wrinkles, avoidance of financial cost associated with use of professional services and in a lack of confidence in results previously obtained,

“So I went to a clinic to have it done through a doctor. The result was that I paid a lot of money and it lasted only 1 month! when I went back to complain he said that this is normal due to the skin type. It is bullshit!!! When I used to do myself it used to last for 6 or 7 month!”

Frustration experienced through unsatisfactory experiences with professional injectors also led to forum discussants considering taking autonomy over their own experiences,

“But, alas, by the last treatment, there was little if any effect at all. It seems the injections had completely absorbed into my face and nothing was helping anymore. Time to take charge of my body and my money”

There were also reports of being told by a professional injector that the process of self injecting Botox was quite simple,

“My newest botox injector - my dermatologist - told me he thinks Botox is quite easy, and he injects himself”

Theme 2: Sourcing

Recommendations for sourcing routes were swapped via discussion threads, with ordering in bulk common once a reliable source had been identified,

“Guys I found a great source for botox, I just ordered a lot because the more I order the more I save, I tested out a small amount first, I knew it was real but just had to double check twice. I can honestly say, it's better result than from the doctor's office! I only wish I've done it years earlier...”

Although many conducted online searches to source products labelled as known brands of filler e.g. “Restylene” or “Radiesse”, others advised against this, as the majority of these were likely to be Chinese counterfeits,

“My logic is instead of purchasing what is more likely to be a counterfeit filler ..it might be a good idea to actually look into the Chinese manufacturing companies, as some manufactures such as the factory which makes “Reyoungel” is CE certified, had on-site inspections etc”

Some forum discussants expressed the desire to source raw powder from China and manufacture dermal filler at home. This was conceptualised as an additional step to autonomize the individual in the process of using cosmetic injectables,

“Additionally, you might see that I asked for a formula for mixing it myself. This added risk which I, myself, alone, am willing to take, doesn't mean that because I am considering this choice, would necessarily recommend it to others. Your mileage may vary, and as you rightly state, your individual rights and liberty grant you freedom to embrace your own philosophy and take your own risks.”

Theme 3: Injecting Practice

The forum encouraged education of the self through YouTube tutorials and “injection maps” to locate injection sites available online prior to injection,

“Injection maps seems to be the way to go I self-injected Radiesse, now I studied and studied and studied every source or Radiesse injection techniques online”

Areas injected with Botox included the eye, eyebrow and forehead area. Dermal fillers were reported as being injected into nasolabial folds, cheeks and lips. Use of Lidocaine, a pain reliever, was reported to reduce injection pain and discomfort,

“Mix the Radiesse with lidocaine in the syringe .it reduces swelling and bruising”

The concept of self-mastery, competence and the right to take ownership over their bodies was upheld by the forum,

“I am all for individual liberty and rights. If you want to inject yourself, more power to you”

Those who had already had cosmetic injectables administered by a professional expressed confidence that they would be able to mimic what they had observed,

“I have been there many times so I think I can easily inject it myself”

Limited information on dosing indicated that it was self-directed, in line with previous studies which reported there were no instructions for dosing with cosmetic injectables ordered online (7).

“I went all crazy and injected 4 bottles so far lol”

Theme 4: Outcomes

Typically positive outcomes were posted as being experienced in the forum. This was often attributed to skilful injecting technique and post injection practices by the individual,

“All in all, I’m pleased... no bumps or lumps, as Radiesse is very moldable for the first day or two, and I smoothed and smoothed and smoothed...”

One adverse outcome posted occurred when an individual, motivated by saving money and time, mixed two different dermal filler products together and self-injected in the lip area,

“I have self-injected many times but as filler is getting hard to obtain, the last time I DIY I mixed two different kinds together- stupid idea I know, but it obviously didn’t mix properly and I have been left with lumps in my lips for 3 years now”

However, this did not deter the individual from future intentions to self-inject, as elements of the outcome were perceived as positive and given priority over negative health consequences, and this was supported by the forum,

“After mixing the two fillers and creating a disaster I haven’t done any more fillers, but ..I decided its time I tried again, as during the period of being swollen when I could see a difference, I felt like a whole new person, I look like I had slept for the first time in years, and I want to be that refreshed again”

Theme 5: Risk perceptions

There was a high level of awareness in forums of the potential for associated negative outcomes, however, the high cost of professional treatments was touted as a sufficient motivator for engaging in

risk behaviour,

“I know self-injection is chancey. I have done it once and it hurt a lot. For those of you who are professionals and do this type of thing for living...I feel pretty certain most of you are speaking out against people doing this, if the prices of having it done weren't so damn high we wouldn't be forced to this measure.”

Fears around self-injecting were posted and acknowledged within forums,

“But how far deep do you all know to go? Some go into the bone and some right under the skin, seems kinda scary no?”

In addition to fear, awareness of risk was high enough to ensure that many forum discussants avoided recommending self-injection to others, but expressions of self-confidence acted as a buffer to deny risk for the individual,

“I'm not condoning anyone trying this; I'm just saying it can be done... I have had it injected 4 times before, so I knew exactly how it was done.”

Discussion

This study is the first to present a ‘snapshot’ of online forums’ member discussions on the use of DIY Botox and dermal filler kits. The belief system of people who inject DIY Botox and dermal filler kits is that they are entitled to the freedom to make informed choices with regard to their own bodies. Despite exhibiting knowledge of the increased risk associated with self-injection of potentially contaminated, counterfeit and over strength products sourced online, forum discussants adapted their core beliefs to accommodate a higher level of risk. People who inject DIY Botox and dermal filler kits belief system is that they are entitled to the freedom to make informed choices with regard to their

own bodies. Despite exhibiting knowledge of the increased risk associated with self-injection of potentially contaminated, counterfeit and over strength products sourced online, forum discussants adapted their core beliefs to accommodate a higher level of risk.

As theorised in Peretti Watel and Moatti (26; 27) in relation to the risk perceptions of people who use drugs, people who injected DIY Botox and dermal filler kits maintained self confidence in their own capabilities to navigate hazards, despite demonstrating awareness of potential harm associated with sourcing cosmetic injectables online and self-injecting. Peretti Watel and Moatti (26; 27) outlined that this type of self-belief may be accumulated through experience (in these cases, either through self-injecting or observing professionals inject) and is reinforced through peer discussion.

Reinforcement occurred within the discussion forum, where success stories are shared of self-injecting cosmetic injectables, lament the perceived financial waste associated with professional treatments, and swap sourcing routes. In this regard, self-confidence to carry out DIY Botox or dermal filler injecting was strengthened reciprocally within the communal dynamics of the forum.

Decision making with regard to sourcing kits online from Chinese sellers and learning to self-inject unknown substances was conceptualised by forum members as well informed and pre meditated (28). Online research included Botox injection maps and YouTube tutorials. This was viewed as building perceptions of self-empowerment and exercising control over one's body (27) - "*I am all for individual liberty and rights. If you want to inject yourself, more power to you*". Of importance is the online community conceptualisation of the self-injection of Botox and dermal filler as responsible self-care (29). Feelings of victimisation by professional injectors, and anticipation of stigmatisation by wider society towards self-injection may have perpetuated the motivation to exercise self-mastery and individualistic decision making to engage in this form of risk behaviour.

Another aspect of risk culture described by Peretti Watel and Moatti (26; 27) is Merton's concept of innovative deviance (30), where desirable goals are achieved through illegitimate means because of

limited access to legitimate ones. In this study, to age naturally was an unacceptable state of being within forums, where individuals sought out illegitimate means to combat what is an inevitable process. Despite knowledge of the risks associated with use of unregulated and untested products from online sources, forum discussants chose this unpredictable course of action rather than accepting their fate. As posited by Peretti Watel and Moatti (26; 27) feelings of powerlessness, caused by such an inexorable force as aging, may increase tendencies to engage in voluntary risk taking in order to elevate the individual's sense of control. While human enhancement interventions, such as Botox and dermal filler injections, to stave off the hallmarks of age are now semi-normalised in contemporary culture, some people may be motivated to seek less costly and more convenient options (29). It was evident in the rhetoric of forum discussants that use of Botox and dermal filler kits was seen as an act of autonomy over perceived obstacles (e.g. financial) in the pursuit of anti-aging goals.

Risk neutralisation (26; 27) was another strategy evident in forum discussant disclosures in this study. Sykes and Matza (31) outline five techniques of neutralization: denial of responsibility; denial of injury; denial of the victim; condemnation of the condemners and appeal to higher loyalties. Three of these five strategies to neutralize risk were apparent in forum discussant statements. "Denial of responsibility" occurred where people who injected Botox and dermal filler kits identified as 'victims of circumstance' and where expensive and ineffective professional treatments 'pushed' them in the direction of DIY kits. "Denial of injury" was seen where forum discussants posted success stories and expressed self confidence in injecting technique. "Condemnation of the condemners" occurred where individuals criticised the efficacy of a professionals technique and questioned their motives, indicating that if prices were lower people would not be 'driven' to self-inject.

Conclusion

We describe here an online study observing the contemporary dynamics around cosmetic injectables. Health and clinical services should be aware of the presentation of harms associated with the self-injection of Botox and dermal fillers. Health and other types of interventions which conceptualise

people who inject DIY Botox and dermal filler kits as rational individuals exercising their free will are warranted. Those who engage in high risk injecting practices, such as mixing products at home or using unsterile equipment, may benefit from targeted harm reduction interventions and policy approaches intended to protect their safety and health whilst not appearing to condemn them for their choices. Future research is warranted in this area. This should focus on further investigation of the injecting practices of this group to include safe injecting practices and harms experienced, as well as the sourcing of formulas to perform 'kitchen chemistry' (32) and manufacture dermal filler kits at home.

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