ABSTRACT

Aim: To explore California nurse injector satisfaction related to Cosmetic Filler Training.

Background: The California Board of Registered Nursing includes cosmetic filler injection, a popular aesthetic service, as within the scope of practice of the California Registered and Advanced Practice Nurse. The method of training these nurses have received has not been evaluated in scholarly literature.

Methods: An anonymous online, seven question survey of nurse injectors in California was made available to nurse injectors currently in practice.

Results: There is currently no standardized approach in nurse acquisition of skill and education in regards to cosmetic filler application.

INTRODUCTION

According to the American Society for Aesthetic Plastic Surgery, “since 1997 there has been a 231.0% increase” in non-surgical cosmetic procedures, the second most popular treatment of which is soft tissue augmentation.1 In 2009 alone, 1,313,038 cosmetic filler injections were performed in the United States.

Cosmetic filler injection is a physician-supervised medical treatment regulated as a registered nurse practice in California by the California Board of Registered Nursing. Acquisition of cosmetic filler injection skills requires post-licensure and post-nursing school instruction.

Although the national statistics on the number of nurses who performed such injections do not exist, the ASAPS survey asserts that even 6.0% of their members do not perform cosmetic filler injections themselves in their practices.1 Aesthetic nursing as represented by nurse cosmetic filler practice is an example of nursing adaptation to the demands of a new century.

The author/researcher was instructed in the specialty of dermal filling injection in 2000 by a lay sales representative of bovine collagen, the filler product prominently in use at that time.2 The Collagen Corporation provided cosmetic filling instruction via non-medical corporate representatives as was the experience described above. After exiting specialty practice in 2004, the author/researcher has maintained curiosity regarding current training practices for cosmetic filling after observing that the subject is not well represented in the literature.

In California, training is most commonly acquired via private pay cosmetic treatment seminars, via individual one-on-one tutoring in a physician’s office and or via completion of a manufacturer’s written tutorial followed by skill demonstration as the nurse injects a volunteer as a non-medical, non-licensed manufacturer’s representative guides the nurse injector with verbal directions. The quality and adequacy of initial training for cosmetic injection skills has not been addressed or formally evaluated by the nursing profession. The following three research questions were addressed in this study:

1. What is the most common method of cosmetic filler training received by California nurse injectors?
2. How do practicing cosmetic filler injection nurses assess the level of their initial training?
3. What recommendations do cosmetic filler injection nurses have regarding the initial training of nurses new to the specialization?

The profession of nursing in the United States will benefit from nurse injector assessment of learning in this special area and from formal recommendations regarding training for nurses new to this specialized area of practice.

The California Board of Registered Nursing includes cosmetic injection within the California registered nurses’ scope of practice. Anecdotal evidence asserts that the majority of practice offices in California offer cosmetic filling by (registered) nurse injectors under the supervision of medical doctors of various specialties. These nurses are not represented in the literature. No scholarly report of their training methods or evaluation of their training methods exists in the literature. This study utilized a seven question anonymous survey offered online to currently practicing cosmetic nurse injectors in California. An online survey was made of anonymous, random respondent nurse injectors in California regarding the source of specialty injection training. Further, respondent assessment and feedback of this training were assessed in the Capstone process.

**MATERIALS AND METHODS**

The purpose of this study was to address a void in the literature on cosmetic nurse injection filler training. Thus, the author/researcher developed a survey entitled *Cosmetic Nurse Injection Filler Training Satisfaction Survey*. This survey was designed to explore nurse injector satisfaction related to cosmetic filler training.

**Selection and Description of Participants**

Polit and Beck reported that the researcher is often surprised by the length of time required to procure an adequate body of study participants. This has certainly been true in this care. Participant sample was initially defined as Northern California nurse injectors currently in practice. However, the sample was broadened to “California nurse injectors” after a low response size became evident. The ultimate sample of cosmetic filler injector nurses in California totaled 25, over one quarter of identified and solicited nurses.

**Human Subjects Protection**

The author/researcher completed the National Institutes of Health’s online training on the Protection of Human Subjects. Additionally, in order to comply with academic and ethical expectations regarding Human Subjects Protection, the researcher successfully petitioned the educational setting, Western Governors University, for Institutional Review Board (IRB) approval for expedited study. No data were collected prior to this approval.

**Methodology**

This research study was a quantitative, non-experimental investigation of California nurse injectors’ satisfaction with cosmetic filler training. A Likert-scale rated participant satisfaction with certain aspects of initial cosmetic filler training. All data collected were submitted anonymously and electronically by study respondents. All surveys were completed anonymously and participant’s confidential responses were not identifiable. Foreseeable risks or discomforts to respondents were nil. Because it was an anonymously emailed survey, any solicitation was easily ignorable. Each respondent was given an option to opt out of future reminder solicitations.

The survey questions established the basic qualifiers for participants and solicited opinions from the respondents. The researcher-designed survey included quantification of length of injection experience, method of initial training, and self-assessment of errors possibly related to the said initial training. Various methods of intramuscular injection training have resulted in various practice results and serious error, according to Carter-Templeton and McCoy. Therefore, questions about error were included in the context of training for injection. The respondents were asked to contribute to assessment in hindsight in a narrative question.

**Data Collection**

The seven question survey was initially emailed to the email addresses of Northern California nurse injectors. These email addresses were procured in a hunt-and-peck telephone search by the researcher telephoning advertising cosmetic physicians in Northern California in effort to locate participating qualifying nurses. The initial intent was to garner participants through telephone contact with office personnel (receptionists or estheticians) who could then identify the appropriate nurse injector(s) and then forward each nurse a copy of the survey tool.

The incentive of a $15.00 Amazon.com gift card was offered to the contact person as well as to each study respondent. This approach was time-consuming, but yielded most of the study participants. The final group, however, required footwork on the part of the author/researcher.

According to Polit and Beck, “gifts and monetary incentives have been found to increase participation along with persistence.” Thus, the $15.00 Amazon.com gift card was offered to appropriate respondents, and multiple re-invitations were cordially made as appropriate. However, despite the incentive offered to study participants, sample size remained small. Thus, the survey was extended to nurse injectors within the entire state of California. Eventually, low response, forced extension into onsite office visits.

The author/researcher personally contacted over 10 medical offices offering cosmetic services in San Francisco. Adjunctive staff was immediately available to refer nurse injector respondents, although the author/researcher made no contact with the respondents themselves. An intention
to avoid bias led to avoidance of corporate involvement. For this reason, study respondents were identified without email lists from various product manufacturers. Study respondents were advised of the educational purpose of this study and that the study had no corporate affiliation. All data were assessed through a commercial online independent survey tool known as Boomerang. This preserved respondent anonymity and confidentiality. Statistical data analysis was also completed through Boomerang.

RESULTS

The study sample consisted of 25 completed surveys. The author/researcher was involved organisationally in anonymous data collection, yet it did not involve the researcher contacting any respondents directly. The method involved the author/researcher phoning California offices at random to request email addresses for practicing nurse injectors and then forwarding the survey to a contact for those addresses.

Factors that May Have Affected Research

There is a potential risk of easy dismissal by the nurse provider who is frequently contacted by product representatives and who may have seen the approved $15.00 incentive as too small. Second, and more difficult to specify, is the movement by certain sectors of physicians and their organisations to market and report cosmetic filling as a physician-only or plastic surgeon-only procedure.

Patterns and Themes

The specific question of how nurses learn one nursing task is rooted in several general nursing education principles as to time, task employment, and task mastery. For this purpose, the most significant patterns visible in the survey tool were:

1. Length of time respondent has practiced cosmetic injection;
2. Method of original instruction; and
3. Respondents’ feedback on that initial instruction in view of time in practice and method instruction.

The evident pattern is simple. Although most nurse injectors who completed the survey reported that they would have preferred to have been trained by a skilled nurse injector, they were not. Most study respondents reported being trained by a non-clinical product representative, but they still reported satisfaction with that initial level of training.

In terms of skill acquisition of the task, there is no indication that early training by non-medical or non-clinical product representatives led to excessive future error in injection. Nurse injectors still reported the ability to master technique and skill development through practice, with the average respondent reporting times as a nurse injecting being greater than 5 years. The categories included Learning, Time/Practice, Skill Acquisition, and Nurse Adaptability.

Patterns and Themes Converge from Different Data Sources

The evident patterns are that the majority of respondents were initially given training by non-clinical product representatives who were absolutely not clinically trained. The data source this resonates is #1 below: Product development/history of practice.

Second, the pattern shown was that these nurses above who were given training by a non-clinical product representative were able to garner their own expertise by practice on the job. Purportedly, these nurse injectors were under the supervision of a physician as they performed cosmetic filler injections on patients.

Third, this pattern reflects the ability of nurses to learn and teach themselves as a matter of course since the majority of the study respondents “Agree” that they had adequate initial training.

Data sources

1. Product development/history of the practice.
2. Nursing education/learning data.
3. Physician impact.

The biggest negative in data collection was gathering respondents. The biggest surprise in the study findings was that respondents, despite being trained by non-nurse injectors and non-clinical product representatives, were still satisfied with their initial training. The fact that nurse injectors reported satisfaction with non-clinical product representative training—defined by them as training which required building on in years of subsequent practice—indicates that they were autonomous self-conductors who take responsibility for learning and resourcefully develop expertise acquisition as they learn in practice.

Results and Interpretation

The primary question of length of time the respondents have practiced injection filling was Question One: Of the 25 respondents, distribution was almost even between relatively new injectors and injectors with over 5 years of experience. See Table 1 for statistics on years of experience and initial training methods of the nurse injector respondents in this study. Survey Question Three: How many technique-related untoward events have you observed since receiving initial training for Cosmetic Filler Injection? Forty percent of respondents answered fewer than 5.0% of their errors were involved (see Table 2). Question Four: The respondents were asked the percentage of injection expertise as related to initial training. Most respondents answered that less than one-quarter was related to initial training (see Table 3). Question Five: asks the percentage of current expertise related to hands-on clinical practice and technique refinement in the time since initial Cosmetic Filler Training. The majority of study respondents indicated little identifiable effect on current practice from initial training (see Table 4).

Question Six: I am satisfied with the INITIAL Cosmetic Filler Training I received.
Nurse Injector Satisfaction Related to Cosmetic Filler Training

Table 1  Years of experience and initial training.

As an RN or Advanced Practice Nurse Cosmetic Filler Injector you have performed Cosmetic Filler Injectors regularly for how many years?

<table>
<thead>
<tr>
<th>Total</th>
<th>Private course or seminar</th>
<th>Training by representative of product</th>
<th>One-on-one training by an experienced non-nurse injector</th>
<th>One-on-one training by a NURSE injector</th>
<th>No pre-practice training</th>
</tr>
</thead>
<tbody>
<tr>
<td>25</td>
<td>6</td>
<td>11</td>
<td>4</td>
<td>4</td>
<td>0</td>
</tr>
<tr>
<td>Less than 1 year</td>
<td>7 28.0%</td>
<td>4 66.7%</td>
<td>2 18.2%</td>
<td>0 0.0%</td>
<td>1 25.0%</td>
</tr>
<tr>
<td>Fewer than 2 years</td>
<td>5 20.0%</td>
<td>0 0.0%</td>
<td>5 45.5%</td>
<td>0 0.0%</td>
<td>0 0.0%</td>
</tr>
<tr>
<td>Fewer than 3 years</td>
<td>4 16.0%</td>
<td>0 0.0%</td>
<td>2 18.2%</td>
<td>2 50.0%</td>
<td>0 0.0%</td>
</tr>
<tr>
<td>More than 3 years</td>
<td>3 12.0%</td>
<td>0 0.0%</td>
<td>1 9.1%</td>
<td>0 0.0%</td>
<td>2 50.0%</td>
</tr>
<tr>
<td>More than 5 years</td>
<td>6 24.0%</td>
<td>2 33.3%</td>
<td>1 9.1%</td>
<td>2 50.0%</td>
<td>1 25.0%</td>
</tr>
</tbody>
</table>

Table 2  Technique-related untoward events and initial training.

How many technique-related untoward events have you observed since receiving initial training for Cosmetic Filler Injection?

<table>
<thead>
<tr>
<th>Total</th>
<th>Private course or seminar</th>
<th>Training by representative of product</th>
<th>One-on-one training by an experienced non-nurse injector</th>
<th>One-on-one training by a NURSE injector</th>
<th>No pre-practice training</th>
</tr>
</thead>
<tbody>
<tr>
<td>25</td>
<td>6</td>
<td>11</td>
<td>4</td>
<td>4</td>
<td>0</td>
</tr>
<tr>
<td>None</td>
<td>5 20.0%</td>
<td>5 83.3%</td>
<td>0 0.0%</td>
<td>0 0.0%</td>
<td>0 0.0%</td>
</tr>
<tr>
<td>Fewer than 5% of total injections</td>
<td>10 40.0%</td>
<td>0 0.0%</td>
<td>3 27.3%</td>
<td>3 75.0%</td>
<td>4 100.0%</td>
</tr>
<tr>
<td>Fewer than 10% of total injections</td>
<td>3 12.0%</td>
<td>0 0.0%</td>
<td>3 27.3%</td>
<td>0 0.0%</td>
<td>0 0.0%</td>
</tr>
<tr>
<td>More than 10% of total injections</td>
<td>5 20.0%</td>
<td>1 16.7%</td>
<td>3 27.3%</td>
<td>1 25.0%</td>
<td>0 0.0%</td>
</tr>
<tr>
<td>More than 15% of total injections</td>
<td>2 8.0%</td>
<td>0 0.0%</td>
<td>2 18.2%</td>
<td>0 0.0%</td>
<td>0 0.0%</td>
</tr>
</tbody>
</table>

Over 50.0% of the nurse injector study respondents reported satisfaction with their initial training (see Table 5). The final quantitative question was: In retrospect, which of the following training additions do you wish had been included in your INITIAL Cosmetic Filler Injection Training? The majority of the nurse injector study respondents reported that they would have preferred one-on-one training by a skilled nurse injector as part of their initial training (see Table 6).

Summary

Although cosmetic nurse injections generally are given initial training by non-clinical product representatives,
Table 3  Injection expertise and initial training.

<table>
<thead>
<tr>
<th>What percent of your current injection technique is related to the initial training you received in Cosmetic Filler Injection?</th>
<th>Total</th>
<th>Private course or seminar</th>
<th>Training by representative of product</th>
<th>One-on-one training by an experienced non-nurse injector</th>
<th>One-on-one training by a NURSE injector</th>
<th>No pre-practice training</th>
</tr>
</thead>
<tbody>
<tr>
<td>None</td>
<td>0.0%</td>
<td>0.0%</td>
<td>0.0%</td>
<td>0.0%</td>
<td>0.0%</td>
<td>0.0%</td>
</tr>
<tr>
<td>Less than 1/4</td>
<td>9</td>
<td>36.0%</td>
<td>5</td>
<td>45.5%</td>
<td>1</td>
<td>25.0%</td>
</tr>
<tr>
<td>Less than 1/2</td>
<td>6</td>
<td>24.0%</td>
<td>2</td>
<td>33.3%</td>
<td>1</td>
<td>25.0%</td>
</tr>
<tr>
<td>Most of my expertise is related to the initial training</td>
<td>4</td>
<td>16.0%</td>
<td>3</td>
<td>27.3%</td>
<td>0</td>
<td>0.0%</td>
</tr>
<tr>
<td>I have trained on too many types of fillers to relate my expertise to one filler training</td>
<td>6</td>
<td>24.0%</td>
<td>1</td>
<td>16.7%</td>
<td>1</td>
<td>9.1%</td>
</tr>
</tbody>
</table>

Table 4  Hands-on clinical practice and initial training.

<table>
<thead>
<tr>
<th>What percentage of your current expertise is related to hands-on clinical practice and technique refinement in the time since your INITIAL Cosmetic Filler Training?</th>
<th>Total</th>
<th>Private course or seminar</th>
<th>Training by representative of product</th>
<th>One-on-one training by an experienced non-nurse injector</th>
<th>One-on-one training by a NURSE injector</th>
<th>No pre-practice training</th>
</tr>
</thead>
<tbody>
<tr>
<td>None</td>
<td>1</td>
<td>4.0%</td>
<td>1</td>
<td>16.7%</td>
<td>0</td>
<td>0.0%</td>
</tr>
<tr>
<td>Less than 1/4</td>
<td>3</td>
<td>12.0%</td>
<td>0</td>
<td>0.0%</td>
<td>3</td>
<td>27.3%</td>
</tr>
<tr>
<td>Less than 1/2</td>
<td>7</td>
<td>28.0%</td>
<td>2</td>
<td>33.3%</td>
<td>3</td>
<td>27.3%</td>
</tr>
<tr>
<td>Most of my expertise is related to my own practice technique refinement on-the-job</td>
<td>10</td>
<td>40.0%</td>
<td>3</td>
<td>50.0%</td>
<td>3</td>
<td>27.3%</td>
</tr>
<tr>
<td>I have trained on too many types of fillers to relate my expertise to one filler training</td>
<td>4</td>
<td>16.0%</td>
<td>0</td>
<td>0.0%</td>
<td>2</td>
<td>18.2%</td>
</tr>
</tbody>
</table>

the cosmetic nurse injectors of dermal fillers in this study sample reported their initial training as being satisfactory. These same cosmetic nurse injectors described a low rate (less than 5.0%) error in technique attributable to initial training.

Cosmetic nurse injectors train themselves on the job as they become more and more skilled at injection through practice. Finally, cosmetic nurse injector study respondents stated that retrospectively, they would have preferred one-on-one initial hands-on training by another skilled nurse injector.
DISCUSSION

Via a researcher-designed survey, nurse injector study respondents were questioned about learning methods; subsequent results of those methods and about how they retrospectively recommend cosmetic filler training be taught. Nurse injector study respondents who answered the survey displayed an ability to adopt a variety of routes to learn cosmetic filler injection technique. Of the 25 survey respondents, the majority reported being taught initially by non-nurse corporate product representatives. Despite listing training other than this method...
CONCLUSION

This study verifies the presence of nurse injectors in practice in California under the auspices of medical doctors as mandated by the California Board of Registered Nursing. The findings of this study present the opinions of a representative sample of those nurses that their preferred method of initial training is via one-on-one nurse expert hands-on instruction.

Limitations

Like many research endeavors, this study had limitations. Limitations of this study included the difficulty of locating appropriate study subjects, gaining their participation, and subsequent small sample size. The first of these limitations comes from research objectivity goals as the corporate product manufacturers individually hold information as to where nurse injectors are in practice under medical doctors in California.

The second limitation lies in individual nurse election to respond. In an effort to ensure anonymity, the survey was administered via electronic mail only. This may be considered one reason why few respondents replied compared to the numbers of requests sent out. Participants were also given an incentive.

REFERENCES


Source of funding: Funded by a grant from Clinical Training & Research Institute, Burlingame, CA.
Competing interest/Conflict of interest: The author(s) have no competing interests for financial support, publication of this research, patents and royalties through this collaborative research. All authors were equally involved in discussed research work. There is no financial conflict with the subject matter discussed in the manuscript.
Disclaimer: Any views expressed in this paper are those of the authors and do not reflect the official policy or position of the Department of Defense. Majority of the information gathered are from media sources which don’t reflect the author’s own opinion.