Evaluating the Impacts of COVID-19 on the Perceptions of Hygiene and Sanitation in Personal Service Establishments in British Columbia

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Abstract

Background: COVID-19 has raised concerns over safety in the personal care service industry in regards to disease transmission and infection control. The industry has suffered under new orders and directives issued by public health officials. Personal service establishments (PSEs) rely on clients going to establishments to receive services that often involve close proximity between the client and service provider, something that is recommended against to prevent COVID-19 transmission. PSEs have since adjusted their operations to accommodate for the pandemic, however its impacts on the perceptions of hygiene and sanitation in these establishments remained to be assessed.

Methods: A self-administered online survey was created using Survey Monkey and results were analyzed using NCSS 2021 Statistical Software. The survey link was posted on the website Reddit and emailed to eligible contacts. Multiple choice and open-ended questions were included in the survey and covered topics such as demographics, current and past PSE attendance, perceptions of hygiene and sanitation in PSEs and regulation in the industry.

Results: Among the eligible respondents, 55% chose skill as the reason for choosing a particular PSE while only 18% chose cleanliness of the establishment. 64% of the respondents felt hesitant to return to a PSE during the pandemic. Overall, the frequency of visits since the pandemic decreased, and the importance of hygiene and sanitation increased. 66% of the respondents indicated that mandatory safety training and certification would make them feel safer about going to PSEs. There were no associations found between the importance of hygiene and sanitation before the pandemic and hesitancy to return to PSEs according to Pearson's Chi square test (P=0.432), nor between age group and the importance of hygiene and sanitation during the

pandemic (P=0.547). Several open-ended responses indicated that more regulation and enforcement in the industry is needed.

Conclusions: The PSE industry in BC severely lacks regulations and enforcement in comparison to the food industry. This study was able to provide evidence that COVID-19 has made an impact on the perceptions of hygiene and sanitation in PSEs. More people seem to be aware of and agree on the need for more regulation. However, the challenge remains in applying consistent standards to an industry where such a wide array of services is offered.

Keywords: personal service establishment, PSE, COVID-19, hygiene, sanitation, training, regulations, British Columbia

Introduction

The personal care service industry is arguably an integral part of today's society. It is a lucrative industry that relies on people going to these establishments as often as multiple times a week or as little as a few times a year. However, due to the COVID-19 pandemic, these establishments, referred to as Personal Service Establishments (PSEs), were forced to close their doors (BC Ministry of Health, 2020). This province-wide lockdown urged owners and operators to adjust their policies and operating procedures to meet health and safety standards for minimizing the spread of COVID-19 before reopening to the public. The demand for PSEs to reopen was equally met with clients who remained hesitant to return to these establishments.

PSEs offer a wide range of services that include nail and hair or barber services, esthetics (skin and body therapy), body modification (piercings and tattoos), indoor tanning, electrolysis, laser hair removal, and several others (Government of BC, n.d.). These services can be innately risky when it comes to disease transmission simply due to the invasive nature of some procedures and close proximity between client and service provider. Furthermore, the use of masks, gloves and other personal protective equipment (PPE) by the workers in these establishments is not a regulated activity in BC. Instead they are recommended and only used at the discretion of the operator or service provider. As a result of the pandemic, virtually all PSEs now require their staff and clients to wear at the minimum appropriate

face coverings during appointments. With the help of WorkSafeBC, operators were also required to implement a COVID-19 safety plan before reopening (WorkSafeBC, n.d.). However, with minimal regulations that are available for environmental health officers (EHOs) to enforce proper hygiene and sanitation in PSEs, consistent compliance with the safety plan cannot be guaranteed and improper practices may continue to happen unknown to EHOs and clients. This project examined whether clients have changed their perception of hygiene and sanitation in PSEs because of COVID-19 and further investigated if there were any factors that influenced their decision to visit a PSE during a pandemic despite the risks. This study also examined whether more regulation for the industry should be necessary and if formal training in infection control should be mandated for PSEs in British Columbia.

Literature Review

Personal Service Establishments

PSEs are defined as "establishments in which a person provides a service to or on the body of another person, and includes a barbershop, beauty parlour, health spa, massage parlour, tattoo shop, sauna and steam bath" (Public Health Act, 2008). Other common and popular services include waxing, lash extensions, microblading, acrylic nail extensions, indoor tanning and cosmetic laser procedures. Services range from being invasive to non-invasive (Popalyar *et al.*, 2019). However, regardless of the invasive nature, there remains a risk for spreading communicable diseases if proper sanitation and infection control procedures are not followed. Legislation on PSEs that are enforceable by EHOs are limited to the Public Health Act and the Regulated Activities Regulation (Regulated Activities Regulation, 2011). The legislation does not describe specific details nor provide recommendations on operation and maintenance procedures to prevent the spread of disease. For more information, an operator can refer to the *Guidelines for Personal Service Establishments* and other associated guidelines that were created for specific PSEs such as body modification, floatation tanks, laser hair removal, and microblading. These guidelines are more comprehensive resources that are not enforceable by EHOs but intended to help operators meet the legislation requirements (Government of BC,n.d.). With these resources, it is ultimately the responsibility of the operator to ensure the establishment remains safe and free from hazardous practices that may lead to infection.

Safety Training in the Industry

The Cosmetologists Actof 1994 was introduced to regulate the beauty industry in BC. However in 2003, the Liberal government at the time cited "over-regulation" and later repealed the Act which subsequently eliminated several requirements such as receiving safety training and certification in order to provide the regulated services (Shaw, 2020). Unlike the food service industry, it is not a legal requirement in BC for a PSE to be operated or staffed by trained and certified employees. FoodSafe is a food safety program mandated under the Food Premises Regulation of the Public Health Act (Food Premises Regulation, 2016). In the PSE industry, BeautySafe is a nationally recognized but voluntary training and certification program that covers topics such as infection control and safe practices for cleaning and sterilization (BeautySafe, n.d.). Most commercial businesses require proof of certification for employment, but because accreditation is not enforced, adequate knowledge in infection control cannot be guaranteed. In the North York region in Toronto, Ontario, out of 72 nail technicians surveyed, 25 (35%) of them reported wearing gloves while providing manicures and only three out of those 25 reported using them consistently. Additionally, between 95-100% of the instruments were reported used more than once even if they were intended to be single-use only (Johnson *et al.,* 2001). These results provide an example for the need to enforce and regulate more programs such as BeautySafe.

Impacts of COVID-19

COVID-19 was declared a pandemic by the World Health Organization (WHO) on March 11, 2020 (Ducharme, 2020). The coronavirus is mainly spread person-to- person via respiratory droplets. According to the Public Health Agency of Canada (PHAC),a healthy individual may become directly infected when respiratory droplets from an infected person contacts the mucous membranes or indirectly infected from touching contaminated surfaces and objects (PHAC, 2020). There is also evidence that longer interaction time between a healthy andinfected individual will increase the risk of transmission (Hendrix, 2020). This can be a problem for PSEs because the duration of services vary from under an hour to up to three hours and providing these services often require being close to clients if not directly touching them (Shaw, 2020). Since the start of the pandemic, several COVID-19 variants, called Variants of Concern (VoC), have been

discovered across the world. The most common variants in BC as of April 2021 are B.1.1.7, first reported in the UK, and P.1, first reported in Japan then later identified in Brazil (BCCDC, 2021 April 15). A third variant, B.1.351 which was first reported in South Africa, has also been detected in the province but is less common. VoC's are problematic due to their ability to spread more easily, cause more severe illness and possibly re-infect individuals who have previously been infected with COVID-19.

Demographics of Clients

Since there are many types of PSEs, the demographic of clients can vary widely between or within types of services and change overtime as well. Nail services, such as manicures and pedicures, have traditionally held a female-dominated client base and in recent years, acrylic nails have especially gained popularity among younger women (Palmer *et al.*, 2020). Men have also started to spend more money on nail services and other personal care. A survey conducted by the International Spa Associated (ISPA) also indicated a 16% increase in male attendance at spas from 2007-2017 (ISPA, n.d.).

A survey of 223 women in Indonesiarevealed that those who were 20-29 years in age went to beauty salons more often than any other age group (Tania, 2016). In BC, a survey of the general public found that peoplewho were over 30 years in age believed that PSEs are minimally regulated whereas thosewho were 21-30 years in age believed that PSEs are moderately regulated. These resultssuggested that the younger age group may have a false impression of a highly regulatedindustry and therefore pay lesser attention toany existing risks and necessary safety precautions (Lojpur, 2014). With respect to COVID-19, those who are under 30 years in age lead the province in the number of confirmed cases. As of April 2021, BC Centre for Disease Control (BCCDC) reported 28,012 confirmed cases in the 20-29age group, followed by the 30-39 age group with 22,690 (BCCDC, 2021 April 23).

Purpose of the Study

COVID-19 has evidently made an impact on the personal care service industry. However, any changes on the perception of hygiene and sanitation standards in PSEs due to the pandemic, particularly among clients, remained to be assessed. This study aimed to identify and evaluate demographic factors or other variables that may be significantly

associated with the decision to return to a PSE during a pandemic. Furthermore, the survey examined whether clients would feel safer going to PSEs in BC if safety training programs such as BeautySafe or some form of accreditation became mandated.

Materials and Methods

Materials Used

Survey design and data organization were done using Microsoft Word and Microsoft Excel 2021. The self-administered survey was created using Survey Monkey (https://www.surveymonkey.com/) and statistical analyses were performed using NCSS 2021 Statistical Software (NCSS 2021 Statistical Software, 2021).

Standard Method

Data was collected using an online self-administered survey created using the BCIT Survey Monkey server. The survey was open from January 11 to January 28, 2021 during which time the link to the survey was posted to online forums called subreddits on the website Reddit (https://www.reddit.com/). Respondents were encouraged to share the survey with their contacts and reminders were posted to the subreddits. The survey was also sent via email to eligible contacts who were asked to forward the link to their contacts as well. All responses were received and recorded automatically via Survey Monkey (https://www.surveymonkey.com/).

The survey contained 17 questions that collected demographic information followed by information on types of PSEs visited, frequency of visits, and the perception of hygiene and sanitation in PSEs before and during the COVID-19 pandemic. Most questions were closed-ended to ensure consistency in the answers received. The number of questions in the survey were kept to a minimum to ensure that it was able to be completed within a short period of time. Shorter surveys achieve a higher responserate by reducing the amount of time reading and answering questions. Studies have shownthat longer surveys result in lower quality data with decreased reliability (Krause, 2015).

Inclusion and Exclusion Criteria

Residents of British Columbia of all ages and who previously visited a PSE in BC before the COVID-19 pandemic were invited to participate. Friends, family and classmates of the investigator were excluded from the study to eliminate bias in results. Participants were informed of the inclusion criteria at the beginning of the survey and were

automatically redirected to the end of the study if they did not meet the eligibility criteria.

Ethical Considerations

Ethical considerations were addressed through a cover letter and consent form. The cover letter informed participants about who was conducting the survey, the purpose of the study, and the intended use of the data collected. A consent form summarized the terms of the study and provided participants with contact information of the investigator if the participants had questions about the study or wished to receive a summary of the results. The survey was open to people of all ages and participation was entirely voluntary. Questions were reviewed and approved by the BCIT Research and Ethics Board before the survey was created and launched online.

Statistical Analysis

Description of Data

The survey collected multichotomous nominal and ordinal data. For all questions, participants were given the option "Prefer not to answer" or to simply skip. Some questions allowed the participant to choose "Other" and provide a response. Open-ended questions were intended to provide participants with the opportunity to express their thoughts regarding the topic of the study.

Statistical Test and Package Used

Data from the survey was downloaded from the Survey Monkey server and manually entered into Excel spreadsheets for organization and descriptive statistical analysis. Spreadsheet data was exported to NCSS 2021 Statistical Software to perform inferential statistical analysis using Pearson's Chi-square test.

Results

Among the 114 respondents, 100 were found eligible, 95 reached the end of the multiple-choice questions, and 79 provided responses to one or more open-ended questions.

Descriptive Statistics

64% (N=63) of respondents were female and 36% (N=35) were male. Responses were received from participants of all age groups, with the most received from those aged 20-29 (37%; N=37) and 60 and above (25%; N=25). The majority of the respondents held at least an undergraduate degree, where 35% (N=35) completed a Bachelor's degree and 27% (N=27) completed a Master's degree or PhD. In regards to occupational field, 8% (N=8)

were in the personal service industry, 15% (N=15) were in public health and/or health care and 7% (N=7) preferred not to answer. The rest of the respondents (70%; N=69)were from different occupational fields including business, education, marketing, food industry, arts and design, technologyand more.

55% (N=53) of the respondents chose skill as the most important reason for choosing a PSE, 18% (N=17) chose cleanliness of the establishment, 11% (N=11) prioritized proximity of the establishment to home or work while 7% (N=7) valued the price of service. Others (9%; N=9) identified a combination of reasons or all of the above. Out of the different types of PSEs, barber and/or hair services were visited the most (73%; N=71) followed by nail services including manicures and pedicures (13%; N=13).

64% (N=62) of the respondents felt hesitant to return to a PSE following lockdown while 35% (N=34) did not (Figure 1). Before the pandemic, 62% (N=60) went to PSEs less than once a month and 32% (N=31) went once a month. At the time of survey, fewer continued to go to PSEs once a month (10%; N=10) and more indicated that they no longer go (29%; N=28).

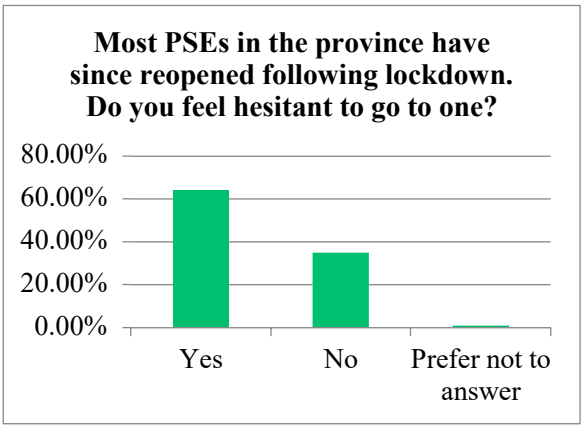

Figure 1. Hesitancy to return

Respondents who considered hygiene and sanitation in PSEs to be “very important” increased from 54% (N=52) before the pandemic to 78% (N=76) at the time of survey. When asked if they would feel safer about visiting PSEs if safety training and certification for these establishments became mandatory, 66% (N=63) of the respondents indicated that they would feel safer while 34% (N=32) indicated that they would not feel safer or were indifferent (Figure 2).

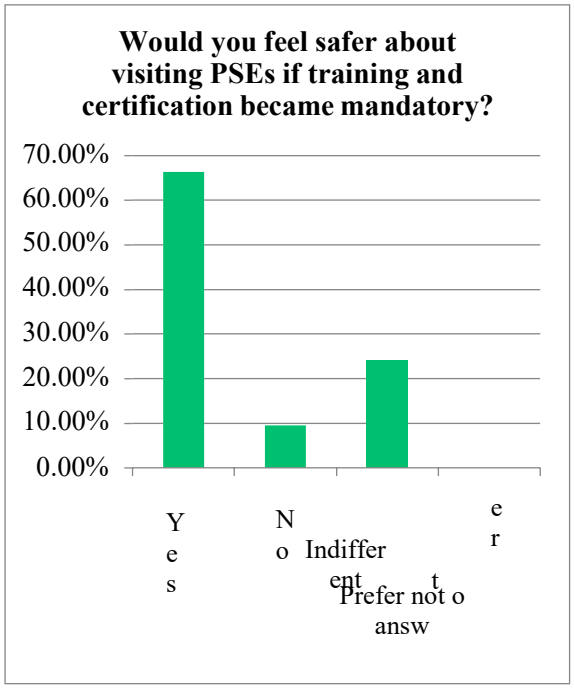

Figure 2. PSE training and certification

Respondents who were not hesitant to return to PSEs indicated the reason being that they had trust and confidence in the facility they went to and believed that many establishments were following recommended COVID-19 control measures. One respondent felt comfortable returning toPSEs as long as masks were being worn and the rest described looking out for safe hygienic practices, as well as becoming familiar with salon safety protocols prior to booking an appointment. In response to the second open-ended question "Why do you ordo you not continue to go to PSEs?" many respondents expressed that they no longer go simply because they do not need the services anymore or realized that they are doable at home. Other reasons included having concerns over safety and cleanliness, fear of close contact and risk of exposure to COVID-19. However, those who indicated that they continue to go to PSEs provided reasons such as having trust in their usual service provider to follow infection control protocols and maintain a safe environment. Regardless of whether the respondents continue to go or have stopped visiting PSEs, COVID-19 has evidently resulted in a greater focus on hygiene and sanitation in these establishments. Many respondents who thought that hygiene and sanitation in PSEs was "somewhat important" before the pandemic have switched their view to "very important" since the pandemic began. All respondents who previously felt that hygiene and sanitation was "not so important" no longer feel the same way.

Inferential Statistics

Inferential statistical analysis was carried out using NCSS 2021 Statistical Software. Pearson's Chi-square test was used to determine if there were statistically significant associations between two groups of nominal data. The first test assessed the association between the importance of hygiene and sanitation before the pandemic

Table 1. Hypotheses and results

#	H_0 and H_a	Test Used	Results	Conclusion
1	H_0: There is no association between the importance of hygiene and sanitation pre-pandemic and hesitancy to return to PSEs. H_a: There is an association between the importance of hygiene and sanitation pre-pandemic and hesitancy to return to PSEs.	Pearson's Chi-square test	P = 0.432	Do not reject the null hypothesis and conclude that there is no statistically significant association between the importance of hygiene and sanitation pre-pandemic and hesitancy to return to PSEs.
2	H_0: There is no association between age and the importance of hygiene and sanitation in PSEs now. H_a: There is an association between age and the importance of hygiene and sanitation in PSEs now.	Pearson's Chi-square test	P = 0.547	Do not reject the null hypothesis and conclude that there is no statistically significant association between age and the importance of hygiene and sanitation in PSEs now.

and hesitancy to return to PSEs following lockdown. The second test assessed the association between age of the respondent and the importance of hygiene and sanitation in PSEs at the time of responding. Table 1 summarizes the tested hypotheses, their results and interpretation of the results.

Discussion

The main objective of this study was to determine if the COVID-19 pandemic changed and made an impact on the perceptions of hygiene, sanitation and overall cleanliness in PSEs. Of particular concern was if there was any demographic group or other variable that was associated with continuing to go to PSEs during the pandemic. The data indicated that there was no significant associations between the importance of hygiene and sanitation in PSEs pre-pandemic and hesitancy to return to PSEs during the pandemic, nor between age and the importance of hygiene and sanitations in PSEs to the respondents now. Despite their lack of significance, these are positive results that indicate there are no particular demographics more likely than others to continue visiting PSEs regardless of the pandemic and its risks. The results also

suggest that public health measures to minimize the spread of COVID-19 have made an impact. This is supported by the decline in PSE visits per month. Those who previously went to PSEs less than once a month maintained their lower frequency of visits, while those who previously visited once a month or more have either reduced their frequency or stopped going.

As seen in Figure 2, 66% of respondents indicated they would feel safer going to PSEs if safety training became mandatory. This shows that there is awareness for safety and the need for more consistent regulation in this industry. This is a stark difference compared to previous studies where the public was asked about their knowledge on the state of PSE regulation and most respondents incorrectly believed the industry was "moderately regulated," which suggested that they paid lesser attention to risks and safety precautions (Lojpur, 2014). According to a previous study assessing microbladers in BC, education and formal training rather than years of experience provided the most knowledge on infection control. The majority of those respondents also agreed that certification and more regulation in the industry should be required (Wong, 2018). Lastly when participants were asked if they had any thoughts or comments regarding the current state of PSE regulation in BC, some respondents thought that the industry needs more regulation while others suggested implementing penalties and consequences for those who fail to adhere to those regulations. Some respondents also compared industries, highlighting the lack of regulation and requirements for PSEs in contrast to those that exist in the food industry for restaurant operators and food vendors. These are supported by previous studies where tattoo artists and microbladers in the industry supported more regulation and inspections and training requirements by health authorities (Raymond *et al.*, 2003). Not only is there a demand from the industry, but it is clear that the subset of the general public that actually goes to PSEs would like to see more control and enforcement as well.

Because this study included PSE clients from British Columbia and referenced guidelines that are specific to the province, these results reflect the thoughts of clients of the PSE industry in BC only. Different provinces may have their own guidelines in regards to the types of PSE services and regulatory frameworks surrounding them.

Knowledge Translation

The results from this study can be applied towards practice when EHOs are conducting routine inspections of PSEs while COVID-19 is still prevalent in the community. It remains important for EHOs to identify hazardous practices, assess whether there may be harm to the public and remind operators about the appropriate procedures that need to be in place. Health Authorities can offer programs that range from week-long courses to shorter workshops or more educational material to help PSE operators safety run their establishment. Programs may focus on all aspects of PSEs including facility design and layout, proper cleaning procedures, and appropriate disinfection and sanitation for instruments and equipment. Health Authorities may also want to consider mandating the completion of a program as a requirement for obtaining approval to operate. Because PSEs in Canada are governed by provincial level authority, the federal government has recommended that staff receive infection control training from local public health units (Rideout, 2010). It may be beneficial for the federal government to establish a national surveillance system for infectious diseases related to the personal service industry. This would be similar to the FoodNet Canada surveillance program for gastrointestinal illnesses related to the ingestion of contaminated food or water (PHAC, 2013). This can help to reassure the public that health officials are regularly monitoring the industry. The results from this study can also influence the creation of new guidelines to inform clients about different types of sanitation and infection control procedures so they can be aware of what to expect from such establishments. It may follow that some people do not prioritize hygiene and sanitation because they are unaware of what to expect. Existing guidelines also need to be amended to account for new and constantly evolving PSE services.

Limitations

There were limitations mainly surrounding the methodology and conducting the online survey. Posting the survey link to Reddit was a challenge and potentially limiting factor on sample size because not all demographics are users of the website or the selected subreddits. Many subreddits also had rules regarding the nature and frequency of subreddit posts, effectively limiting the number of times the survey could have been shared (Reddit, n.d.). Invitation emails were sent to eligible contacts, however it was difficult to guarantee that emails were seen on a timely

manner and if surveys were being completed as a result. Other forms of surveying were not pursued in order to minimize unnecessary public encounters and adhere to the recommended COVID-19 control measures.

Future Research

The following are recommended ideas for future research projects:

- Survey on the knowledge level of sanitation and infection control of PSE workers
- Survey clients of PSEs on their knowledge level of sanitation and infection control
- Survey different types of PSEs for their knowledge and opinions on the regulations
- Repeat this study after the pandemic is declared over

Conclusion

Despite failure to find significant associations in this study, the survey results provided evidence that COVID-19 has made an impact on the perceptions of hygiene and sanitation in PSEs nonetheless. The perceived importance of hygiene, sanitation, and overall infection control during pandemic times has evidently increased. It appears that more people have also become aware of the need for more regulation in the industry. However, creating regulations for an evolving industry is difficult. While regulatory changes often occur slowly, immediate changes can occur through the work of BC's environmental health officers during routine inspections of PSEs. Results from this study can be used by EHOs to better understand how the public feels and what they observe while in PSEs to translate those findings in a way to operators to help them maintain a safe environment for their clients.

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Competing Interests

The authors declare that they have no competing interests.

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