

## Silicone use in Nepali transgender women: The hazards of beauty

### Abstract

**Purpose:** It is widely believed that transgender individuals in Nepal inject silicone for face and body manipulation, a phenomenon thought to be common among transgender individuals globally. Therefore, this qualitative study conducted in Nepal explored: a) awareness of silicone use and sources of information; b) reasons for using silicone; c) notion of cost and quality of these procedures; d) reported negative aspects, including side effects; and, e) health seeking behaviours of Nepali transgender women. **Design/methodology/approach:** We carried out eight focus group discussions (FGDs) with transgender women at four different districts of Nepal, five in the capital Kathmandu and three in different rural areas. We also interviewed three transgender women who preferred not to participate in the FGD but were happy to be interviewed separately. Similarly, six interviews with stakeholders working for sexual and gender minority populations were also conducted. **Findings:** Most FGD participants were young (mean age  $23.06 \pm 3.9$  years) and the majority (55%;  $n=34$ ) completed grade six to high school level. Peer networks of transgender people and the internet were the more popular sources of information about silicone. The decision to use silicone was largely influenced by the desire to look beautiful and more feminine. Often they appear not to follow the recommended procedures for silicone use. Their health seeking behaviour regarding side effects or complications of these procedures was very poor. **Originality/value:** Findings reflect that targeted interventions aimed at transgender individuals should educate them on the use of silicone, as well as explore safe and affordable approaches to meet gender-related appearance needs of Nepali transgender people.

**Key words:** Silicone injection, transgender, harm reduction, South Asia

### Introduction

Injecting silicone to manipulate physical appearance is thought to be common among transgender women, mainly applied to lips, thighs, breasts, hips and buttocks to achieve a cosmetic enhancement. Silicone is easy to inject, permanent, and relatively inexpensive [1]. However, for many transgender women, accessing illicit silicone fillers may be the only choice available to make changes to their appearance due the high costs of gender affirmation surgeries [2]. As this substance is not approved for body modification or cosmetic purposes [3], transgender people may inject silicone without a medical supervision. Studies have

shown the use of silicone by the transgender people ranging from 17% in San Francisco, USA, 49% in Brazil [4] to a high of 69% in a transgender sample in Thailand [5].

Injecting silicone frequently involves non-medical products and equipment in nonsterile and non-health environments [6]. Mass media often report about injecting low grade substances to attain a feminine shape. For example, a transgender woman referred to in the media as a “toxic tush doctor”, was sentenced for injecting a mixture of cement, glue, mineral oil and tire sealant into a woman’s buttocks [7]. Past research and case reports have reported the hazards of silicone injections such as infection, foreign body reaction (hypersensitivity), granulomatous diseases, unavoidable dermatologic complications and migration of the silicone/implantable material [1, 6, 8-11]. These complications may require transgender women to attend a dermatologist or plastic surgeon. In some cases, silicone injection has led to acute pulmonary haemorrhage, pneumonitis and organ injury or failure [6]. This suggests that the use of non-medical grade products, incorrect volumes and/or placement can have life threatening health consequences for transgender people.

Over the past decades, Nepal has witnessed significant legal improvements that affirm rights of sexual and gender minority (SGM) people such as lesbian, gay, bisexual and transgender (LGB&T). The Constitution of Nepal and strategic documents such as the Nepal Health Policy [12] and the Nepal Health Sector Strategy 2015-2020 [13] protect the rights of SGMs [12, 13]. Nepal currently acknowledges its transgender community by allowing a third category of ‘others’ [meaning ‘other sex’ than male or female] on passports, citizenship certificates, voters’ identity card and immigration forms. However, this socially vulnerable population faces high levels of discrimination in social, administrative and health care settings in a culture that is often very traditional. This results in high levels of unmet needs in health and social care among transgender populations.

There are about 25 million trans people worldwide [14]. In Nepal, it is estimated for 2016 that the range of transgender individuals is between 18,704 and 24,216, without specifying the proportion of trans women or men [15]. However, the ambiguity around definitions of transgender identity combined with stigma and discrimination of transgender populations makes it hard to establish precise numbers of the transgender population. The recent proposal to shift descriptive elements of transgender identity from ‘mental health disorders’ to ‘sexual health categories’ may reduce stigma and help improve the estimation of the size of this population [16].

Recent global literature signals that the general health of transgender people is among the least prioritised research fields [17, 18]. Limited research on transgender individuals in Nepal or other South Asian countries suggests that these studies are predominantly focused on human immunodeficiency virus (HIV), sexually transmitted infections (STIs), sexual behaviour and, recently, around mental health and well-being issues of the transgender population. It could be due to the fact that transgender population is one of the key populations that are disproportionately affected by HIV [19]. For example, transgender individuals in low and middle-income countries (LMICs) are 50 times more likely to be infected with HIV than other adults of reproductive age [20]. The high prevalence of HIV among Nepali transgender [e.g., men having sex with men (MSM): 6% vs. transgender: 11.5%] is also documented in the recent Integrated Biological and Behavioural Survey (IBBS) of Nepal [21]. Similarly, compared to MSM, a higher proportion of transgender people in Nepal experience suicidal ideation (39.8% vs. 21.3%) and attempt suicide (15.3% vs. 6.4%) [22]. Smoking and alcohol consumption are also widespread in Nepal's transgender people [23]. Uptake of health care services including HIV Testing and Counselling (HTC) by Nepal's transgender population is also poor [24]. Since Nepali societies are generally conservative and condemn sexual orientation other than heterosexuality, it can be difficult for trans people to seek health and social care services [25].

Similar to transgender people from other geographical settings, it is believed that transgender women in Nepal also use silicone for face and body manipulation. However, there is a lack of research on silicone use by Nepali transgender. In this paper, we report findings from a qualitative study that primarily aimed to explore hormone use by Nepali transgender women [26]. During focus groups discussions (FGD) [27] and interviews [28] with transgender women, many unexpectedly spoke about issues around silicone use. Therefore this paper focuses on such issues raised by participants around silicone use.

## **Methods and materials**

We conducted eight FGDs among transgender women aged 18 years and above. The number of participants in each FGD ranged between seven to nine persons. In order to capture diverse views, eight FGDs (five in capital city of Nepal, Kathmandu) were carried out in four of the seven provinces of Nepal (Table 1), representing mountain, hill and *terai* (low land region of Southern Nepal). As in most countries of the world marginalised groups often are attracted to the bigger cities because attitudes there are generally more liberal. Nepal has a largely rural population with only one real big city. We included three transgender women who preferred

not to participate in the FGD but liked to be interviewed separately. Similarly, we carried out six key informant interviews (KII) with relevant stakeholders, including representatives working in Non-Governmental Organisations (NGOs) supporting the SGM population in Nepal. We conducted FGD and interviews up to the data saturation point [29].

Table 1: FGD participants by study areas

Province/district	Participants N
Province 1: Sunsari (1 x FGD)	8
Province 3: Kathmandu (5 x FGD)	39
Province 4: Kaski (1 x FGD)	7
Province 6: Banke (1 x FGD)	8
<b>Total</b>	<b>62</b>

We invited potential research participants using a convenience sampling strategy in close collaboration with a non-governmental organisation (NGO) working for the SGM population in Nepal. Participants for the FGDs were invited through the NGO's network as it was not possible to use more public recruitment strategies for this hard-to-reach and marginalised population.

The FGDs and interview guides were developed based on the literature and expert consultation, and pretested [30] through one FGD with transgender women in Kathmandu. Copies of FGD and interviews schedules are available from the first author on request. All the FGDs and interviews were conducted in Nepali by experienced qualitative researchers in a private place which was mutually agreed by the researchers and the participants. Most of our FGDs lasted between one to two hours whereas interviews took between 45 minutes to one hour. The researchers made short field notes of non-verbal behaviour during the qualitative data collection.

With permission from the participants, the FGDs and interviews were audio recorded. These recordings were transcribed [31] and then translated into English by a Nepali researcher. Transcripts were cross checked with original recordings. Any transcription disagreements were discussed between the PRR and SRN. Each transcript listed the setting, how the discussion had established, key differences to previous qualitative data and a reflection on issues identified in the session. NVivo 11 (QSR international Pty Ltd, Australia) was used to organise qualitative data [32]. As part of the thematic analysis [33], PRR inductively coded all transcripts (interviews and FGDs together) and EvT and SRN coded half of the transcripts each as second independent coders. All data concerning silicone use

contributed to the distillation of the themes listed below. Relevant quotes are presented to illustrate the key themes [34]. A consolidated criteria for reporting qualitative studies (COREQ) checklist was followed to report the qualitative data from this study [35].

Our study protocol was approved by Bournemouth University [Ref: 12251] and the Nepal Health Research Council [Ref: 188/2016]. Through a participant information sheet in Nepali, research participants were provided with information about the study procedure, confidentiality, study purpose, risk and benefits to the participants and complaint procedure [36]. Informed consent was obtained from all research participants prior to FGDs and interviews. No monetary incentive except travel expenses were offered to participants.

## **Results**

The mean age of FGD participants was  $23.06 \pm 3.9$  years and more than half of the participants (55%) had completed grade six to high school level. Just under one-third of our FGD participants had completed higher secondary education (above School Leaving Certificate [SLC] level). Most participants ( $n=51$ ; 82%) were from Brahmin/Chhetri and Janajati ethnicity, some 39% lived with friends and 42% worked in restaurant/bars.

Table 2: Characteristics of FGD participants

<b>Socio-demographic Characteristics (N=62)</b>	<b>N (%)</b>
<b>Ethnicity*</b>	
<i>Brahmin/Chhetri</i>	26 (41.9)
<i>Newar</i>	8 (12.9)
<i>Janajati (including Tharu/Chanduari)</i>	25 (40.3)
<i>Dalit</i>	3 (4.8)
<b>Education</b>	
<i>Up to primary (up to 5 grade)</i>	9 (14.5)
<i>Up to school level (6 to SLC)</i>	34(54.8)
<i>Higher (above SLC)</i>	19(30.6)
<b>Occupation</b>	
<i>Bar dancer</i>	12(19.4)
<i>Waiter</i>	14(22.6)
<i>Business</i>	4 (6.5)
<i>NGO/development worker</i>	4 (6.5)
<i>Sex worker</i>	3(4.8)
<i>Modelling/fashion</i>	1(1.6)
<i>Unemployed</i>	24 (38.7)
<b>Currently living with</b>	
<i>Friends</i>	24 (38.7)
<i>Family</i>	24 (38.7)
<i>Alone</i>	14 (22.6)
<b>Time at current address</b>	
<i>≤6 months</i>	15 (24.2)
<i>&gt;6 months</i>	47 (75.8)

\*Ethnicity recoded as per the Census of Nepal

Five themes emerged from the FGD and interviews: (a) familiarity and source of information about silicone; (b) reasons for silicone use; (c) notions of cost and quality; (d) reported negative aspects; and (e) health-seeking behaviours of Nepali transgender women. These are discussed in turn below.

**a) Familiarity and source of information about silicone**

Most participants were familiar with silicone use among Nepali transgender people. When asked they noted the internet, particularly ‘YouTube’ or ‘Google’ and peers as the main sources of information, for example:

“...It is a generation of internet. We can know everything if we search in Google. For this, we should know to check in internet.” (FGD, VII)

“...I watch YouTube and learn about many things including silicone use, sex change surgery... we also learn many things from our friends who have done these things...I

*found out from my friend who works with me in the same office. I went with him for silicone injection as he knew the place.” (FGD VIII)*

Participants stated that services for injecting silicones are not widely available in Nepal but they claimed that there are many places in Kathmandu where these procedures are carried out. Many participants spoke about having used silicone, as exemplified by the following quotes:

*“Here are fillers [silicone] for my beautiful chin. This is not Botox, it is silicon.” (FGD, I)*

*“I have injected silicone. She has also done [pointing to another participant]. It is available in Kathmandu.” (FGD, I)*

#### **b) Reasons for silicone use**

Our participants highlighted several factors that encourage them to use silicone. Frequently reported reasons were their body image, identity and wider social acceptancy. Some also argued that personal satisfaction, opportunity for long-term relationships (e.g., marriage) were the other reasons for injecting silicone by transgender women. One participant stated:

*“I used to feel a bit uncomfortable previously. I did not use to roam here and there but was running my own hotel. Boys used to come, eat at my hotel but also wanted to touch here [=showing breast]. They would say that this person is like this...so I did this [silicone injection]. Now I feel better than before.” (FGD, III)*

Another participant spoke about silicone use to help her look more feminine without going through a sex change operation:

*“I am transgender and want to maintain my identity. I think about implanting silicone if I get the money but I do not want to undergo the complete sex change and become a woman. Some of our friends do want to have sex change but I don't have that desire.” (FGD, IV)*

*“When we ask them if they are using any medicine to become like a girl then most of them say, “Everything is fine. I just want to increase my breast by using pills or silicone.” (KII, III)*

Similarly, financial benefits to look more feminine, particularly by transgender sex workers are also frequently shared by participants, for example:

*“...Some work as sex worker so they need to look beautiful to attract clients. Lower part [of your body] can be covered, and can only be shown during that time [=sex] but more attraction is focused on the upper part [=breasts]. So it is compulsory to have[=silicone implant]. If their upper part [breasts] looks natural then they can get the amount they want.” (In-depth Interview, III)*

*“Rather than earning, actually we do not want to do sex work. It is easier for us to negotiate for extra money if our body looks nice.” (FGD, III)*

The notion of fewer side-effects of silicone compared to other procedures for body manipulation such as sex hormones or sex reassignment surgery was also reported, as exemplified by these quotes:

*“...hormone use produces adverse effects to our health...compared to that silicone use do not cause any sort of major complications so we want to take this but it is not cheap either.” (FGD, IV)*

Others suggested silicone might be used after hormone therapy or in combination with it:

*“My friend used silicone because her breast did not develop.” (FGD, II)*

### **c) Notions of cost and quality**

There was a consensus among participants that the quality of services abroad is much better than in Nepal, therefore, they always preferred getting silicone abroad, particularly in Bangkok:

*“...Yes, it is done in Teku [a place in Kathmandu]...we have seen our friends get silicone there...There is some difference like in case of Bangkok they do it [=silicone implant] from armpit but here [=Nepal] they do from here [=showing side of the breast]. Stitches are also visible if it is done from here [=showing side of breast] while it would not be so visible in the armpits.” (FGD, VII)*

*“...I have heard that silicon implantation is available in Nepal these days. But I haven't done silicone implant in Nepal. I went abroad for this.” (In-depth Interview, III)*

*“...one done in Nepal is a bit hard...it is not as good as in Thailand. The wound may be visible if you do in Nepal.” (FGD, II)*



Participants shared that the cost for of silicone implants ranged from one to two hundred thousand Nepali Rupees (equivalent to USD 1,000 to 2,000) but it really depends on the amount of silicone inserted. If injecting silicone is performed overseas, the travel and accommodation add extra costs as reported by participants:

*“...I have used silicon here [=breasts]. It costed me about two lakhs [=USD 2000] and something to go and to return [Thailand]. It costed one lakh fifty thousand [=USD 1500] for silicon implant only.” (FGD, VII)*

These high cost associated with the procedures were highlighted as barriers to seeking these services. Hence, some participants mentioned that only wealthy people can afford these procedures, for example:

*“...only people who has good job can afford these procedures. Some are in modelling field and some are running their own business...they may go overseas and take services.” (FGD, III)*

*“...I am saving money for making the upper part first [silicone use in breast]. I will possibly do sex change later.” (FGD, II)*

One interviewee opted for hormones as these are cheaper than silicones:

*“I took Nilocon White [=oral contraceptive pill] as I did not have enough money for silicone use.” (In-depth Interview, II)*

#### **d) Negative aspects**

Though many argued that there are few side effects of silicone use, some reported negative aspects of these procedures. They agreed that silicone needs to be carefully handled, especially massaged:

*“...It has a chance of getting damaged. In some people, it might be hard if massage is done carelessly during the “medicine period” immediately after insertion. In many people, it becomes loose and reaches till here because of excess massage. Getting loose is also fault and becoming hard like stone is also fault.” (FGD, I)*

There was also the view that the weather can impact adversely on silicone implants:

*“...Silicon implant of [name] had already hanged down. Also, the climate of Nepalgunj [western Nepal] is not good, it is very hot there. And the weather of*

*Kathmandu is also not good. If we have any problem then how can we come to Kathmandu and how can we go overseas?” (KII, V)*

Another key informant said:

*“...They get information from their friends so they have not clearly understood about the side effects and future consequences of these procedures. If they use this without counselling, they might not have any instant side effect now but they there be huge side effects in the future. So, there is a need of counselling for them.” (KII, IV)*

#### **e) Health-seeking behaviour**

Participants generally believed that there is no need for follow up care after silicone use. They claimed that health care seeking or counselling after silicone injection is not necessary. However, some stated that they would seek health care services if they have any health issues related to silicone or hormone use or other health issues. Participants said that they generally seek services in Nepal; however, if there is a complicated situation, they prefer to go overseas.

*“...[Name] used silicone some time ago. She is going to Bangkok because her breast at one side is small and another side is larger.” (FGD, III)*

*“Simple follow up is possible here but we have to go abroad [Thailand] only if we have any kind of reaction.” (FGD, II)*

*“...No, we did not have to do anything [after silicone] like that.” (In-depth Interview, I)*

Most said that follow-up services (if required) they get from Nepal are good. Few participants, however, said that they may not get proper advice from health care providers in Nepal as doctors or nurses may not be aware that transgender people may use silicones.

Issues of stigma and discrimination were often mentioned related to their transgender identity, for example when seeking hospital care:

*“No, I did not go anywhere. If I do check-up and if they show serious problem then... I had gone to teaching once. I had to open clothes for video x-ray. There were boys also. I felt very shy thinking that breast will be seen.” (FGD, III)*

The following quote gives examples of how interviewees had been ill-treated by health care staff who could not accepted their gender identity:

*“I was very insulted in [=hospital name] counter. It was 7-8 years ago. My hair was also long, I used to do make up. I had a bit of a problem and come for check-up. At the counter they saw me and insulted me. Then I felt angry and shouted and said, “They called me hijada [local term in South Asia for transgender individuals].” (FGD III)*

The above quotes illustrate that there is still discrimination in many health services towards transgender people in Nepal. This prevents many of them from taking up services or sharing their health problems with professionals.

## **Discussion**

This is the first study to explore views around silicone use by Nepali transgender women. Our study reports that transgender women are aware of silicone use and many have undergone procedures to feminize their contours. Peers of transgender people and the internet played a significant role in accessing information about silicone use. Indeed, seeking sensitive information on topics such as sexuality and reproductive health from peers is not unique in Nepal [37] or South Asia [38]. However, seeking information from peers may not always be a reliable approach due to their poor competency in complex and technical issues. Similarly, the internet seems to be a popular channel for information on silicone implants among Nepali transgender individuals. We argue that assessing the reliability of online information is difficult. Moreover, users require a good level of health literacy as well as English language competency as online content is generally in English, suggesting limited access to potentially poor information through peer or internet may lead to a ‘badly’ informed choice for transgender individuals.

Participants discussed many factors that encourage them to use silicone. However, their main motives are to look more feminine and beautiful. Some even practiced silicone to attract clients (those working as sex worker) or establish a long-term relationship. This desire may mean they are not always following the recommended procedures for silicone use, follow-up or treatment for any side effects. Improper silicone injection practices may lead to complications including migration of the silicone [9, 39]. Furthermore, as silicone is a permanent material, treatment of its side effects or complications may be difficult. In many cases, the only option is surgical excision [1] which can be costly for transgender women who are already burdened by poor financial circumstances. Lack of access to appropriate care is associated with poor mental health outcomes such as depression and non-suicidal and self-

harm, and suicide among transgender individuals [40, 41]. There is also evidence that transgender people share needles and syringes to inject hormones or silicone [42]. If injections are not performed in a sterile manner or the injection equipment is contaminated, there is the additional hazard of the transmission of blood born infections such as HIV, Hepatitis B and C [43]. Targeted interventions to Nepali transgender individuals, therefore, should help disseminate such information.

Our participants frequently questioned around the quality of the silicone or the procedure available in Nepal. These perceptions force them to seek services abroad which are expensive for most transgender individuals as most of them are unemployed or engaged in low-income jobs. Moreover, due to the language barriers abroad or poor assertiveness skills, transgender people may not know whether they are serviced by medical or non-medical practitioners. Many believed that the health professionals in Nepal may not be aware of silicone use by the transgender population, which may stop them from seeking care. There is a need to orient/educate health professionals as they may not understand the need of transgender people, or be aware of the health implications of silicone.

The transgender population will have many health issues on top of sexual and reproductive health (SRH) and HIV prevention. The deeply rooted traditional societies have not only made the transgender people's life difficult, this discrimination also acted as a barrier to seeking health and social care services. To solve this requires a holistic approach to meet the health care needs of transgender people in Nepal. Most current programmes for transgender population or other sexual and gender minority population in Nepal are focused on promoting safe sex behaviour as they are considered as a 'key population' for the HIV response due to their high-risk sexual behaviours [19, 20, 23]. Current programmes in Nepal ignore silicone use or other procedures such as gender reassignment surgery or hormone use among transgender population. If the current interventions provide training on silicone use and issues such as hormone use and their side effects, transgender people may cascade the proper information to their peers just like they are currently doing for HIV and STI prevention and care.

Although transgender population constitute a small proportion of the population, to achieve universal health coverage as envisioned in the Sustainable Development Goals (SDG), it is imperative to understand the need of health care and the risk behaviours of the transgender population in Nepal. A recommendation for future practice is that programmes should explore safe and affordable approaches to meet gender-related appearance needs of

Nepali transgender people. For future research, we suggest further quantitative research is needed to determine: (a) the overall prevalence of silicone use among transgender women; and, (b) the consequences of silicone use on the transgender people. In addition, future studies should seek a deeper understanding of factors that motivate transgender people to engage in potentially risky behaviours.

### **Strengths and limitations**

This is the first in-depth study of its type in Nepal. Moreover, despite the sensitivity of the topic most participants actively engaged during the FGD and interviews, giving us a rich data set, and no single participant dropped out during the study. The study also has limitations: first, despite having covered the capital and three more remote cities may have missed the views of transgender women from other socio-cultural or behavioural backgrounds. Secondly, as we recruited through a local organisation working for transgender community, we may have missed people who do not want to be part of this network. Thus, our participants may be better exposed to the health and social issues facing transgender populations. Thirdly, as sexuality issues are not openly discussed in Nepal, our participant might not have shared very personal and sensitive issues openly. Finally, as findings of this study emerged from a qualitative study that aimed to explore hormone use of Nepali transgender women, our focus group and interview questions may have missed other key aspects of silicone use. Similarly, as the issue of silicone emerged and was not part of the interview schedule many KII did not mention it. If we had asked question to KIIs we may have had more responses on the topic from them, as a consequence this paper is largely based on insights from transgender women.

### **Conclusion**

Nepali transgender individuals are generally familiar with silicone use and other procedures such as hormone use, gender reassignment surgery or surgical procedures for body manipulation. However, their health-seeking behaviour regarding the hazards in the form of side effects or complications is very poor. One practical recommendation is that targeted intervention programmes should include education on silicon use and other procedures used to manipulate physical appearance and their impacts, including recognising side effects of silicone use. Awareness raising interventions can help transgender populations to make more appropriate decisions about both body beautification and health-care seeking if this is required.

## Acknowledgments

We would like to thank all the FGD and interview participants for their active participation in our research. We would also like to thank Blue Diamond Society for its support. We also thank the reviewers for their insightful comments on the initial submission.

## Conflict of Interest

We declare that we do not have any conflict of interests.

## References

1. Baumann, L. S.; Halem, M. L., Lip silicone granulomatous foreign body reaction treated with aldera (imiquimod 5%). *Dermatologic Surgery* 2003, 29, (4), 429-432.
2. Wilson, E.; Rapues, J.; Jin, H.; Raymond, H. F., The use and correlates of illicit silicone or “fillers” in a population-based sample of transwomen, San Francisco, 2013. *The Journal of Sexual Medicine* 2014, 11, (7), 1717-1724.
3. Álvarez, H.; Mariño, A.; García-Rodríguez, J. F.; Vilas-Sueiro, A.; Valcarce, N.; Llibre, J. M., Immune reconstitution inflammatory syndrome in an HIV-infected patient using subcutaneous silicone fillers. *AIDS* 2016, 30, (16), 2561-2563.
4. Pinto, T. P.; Teixeira, F. d. B.; Barros, C. R. d. S.; Martins, R. B.; Saggese, G. S. R.; Barros, D. D. d.; Veras, M. A. d. S. M., Silicone líquido industrial para transformar o corpo: prevalência e fatores associados ao seu uso entre travestis e mulheres transexuais em São Paulo, Brasil. *Cadernos de Saude Publica* 2017, 33, e00113316.
5. Guadamuz, T. E.; Wimonasate, W.; Varangrat, A.; Phanuphak, P.; Jommaroeng, R.; McNicholl, J. M.; Mock, P. A.; Tappero, J. W.; van Griensven, F., HIV prevalence, risk behavior, hormone use and surgical history among transgender persons in Thailand. *AIDS and Behavior* 2011, 15, (3), 650-658.
6. Styperek, A.; Bayers, S.; Beer, M.; Beer, K., Nonmedical-grade injections of permanent fillers: medical and medicolegal considerations. *The Journal of Clinical and Aesthetic Dermatology* 2013, 6, (4), 22.
7. Dailymail.com Reporter, Transgender woman known as the 'toxic tush doctor' for injecting women's buttocks with silicone and cement is sentenced to 10 years following the death of a patient. *Dailymail.com* 2017.
8. Lafaille, P.; Benedetto, A., Fillers: contraindications, side effects and precautions. *Journal of Cutaneous and Aesthetic Surgery* 2010, 3, (1), 16.
9. Bigatà, X.; Ribera, M.; Bielsa, I.; Ferrándiz, C., Adverse granulomatous reaction after cosmetic dermal silicone injection. *Dermatologic Surgery* 2001, 27, (2), 198-200.
10. Visnyei, K.; Samuel, M.; Heacock, L.; Cortes, J. A., Hypercalcemia in a male-to-female transgender patient after body contouring injections: a case report. *Journal of Medical Case Reports* 2014, 8, (1), 71.
11. Hughto, J. M. W.; Reisner, S. L.; Pachankis, J. E., Transgender stigma and health: A critical review of stigma determinants, mechanisms, and interventions. *Social Science and Medicine* 2015, 147, 222-231.
12. Ministry of Health *National Health Policy*; Ministry of Health: Kathmandu, 2014.
13. Ministry of Health and Population *Nepal Health Sector Strategy 2015-2020*; Ministry of Health and Population: Kathmandu, 2015.
14. Winter, S.; Diamond, M.; Green, J.; Karasic, D.; Reed, T.; Whittle, S.; Wylie, K., Transgender people: health at the margins of society. *The Lancet* 2016, 388, (10042), 390-400.

15. Poudel, T.; Gupta, S.; Bhattarai, R.; Rawal, B., Mapping and Size Estimation of Key Populations on HIV Surveillance in Nepal. *Journal of Gandaki Medical College-Nepal* 2019, 12, (1), 39-42.
16. Robles, R.; Fresán, A.; Vega-Ramírez, H.; Cruz-Islas, J.; Rodríguez-Pérez, V.; Domínguez-Martínez, T.; Reed, G. M., Removing transgender identity from the classification of mental disorders: a Mexican field study for ICD-11. *The Lancet Psychiatry* 2016, 3, (9), 850-859.
17. Lo, S.; Horton, R., Transgender health: an opportunity for global health equity. *The Lancet* 2016, 388, (10042), 316-318.
18. Reisner, S. L.; Poteat, T.; Keatley, J.; Cabral, M.; Mothopeng, T.; Dunham, E.; Holland, C. E.; Max, R.; Baral, S. D., Global health burden and needs of transgender populations: a review. *The Lancet* 2016, 388, (10042), 412-436.
19. Balakrishnan, V. S., Growing recognition of transgender health. *Bulletin of the World Health Organization* 2016, 94, (11), 790.
20. Baral, S. D.; Poteat, T.; Strömdahl, S.; Wirtz, A. L.; Guadamuz, T. E.; Beyrer, C., Worldwide burden of HIV in transgender women: a systematic review and meta-analysis. *The Lancet Infectious Diseases* 2013, 13, (3), 214-222.
21. NCASC *Integrated Biological and Behavioural Surveillance (IBBS) Survey among Men who have Sex with Men and Transgender, Round 2, Nepal 2018*; Ministry of Health and Population, National Centre for AIDS and STD Control: Kathmandu, 2018.
22. Kohlbrenner, V.; Deuba, K.; Karki, D. K.; Marrone, G., Perceived discrimination is an independent risk factor for suicidal ideation among sexual and gender minorities in Nepal. *PloS One* 2016, 11, (7), e0159359.
23. Bhatta, D. N., HIV-related sexual risk behaviors among male-to-female transgender people in Nepal. *International Journal of Infectious Diseases* 2014, 22, 11-15.
24. Shrestha, R.; Philip, S.; Shewade, H. D.; Rawal, B.; Deuba, K., Why don't key populations access HIV testing and counselling centres in Nepal? Findings based on national surveillance survey. *BMJ Open* 2017, 7, (12), e017408.
25. Wilson, E.; Pant, S. B.; Comfort, M.; Ekstrand, M., Stigma and HIV risk among Metis in Nepal. *Culture, Health & Sexuality* 2011, 13, (03), 253-266.
26. Regmi, P. R.; van Teijlingen, E.; Neupane, S. R.; Marahatta, S. B., Hormone use among Nepali transgender women: a qualitative study. *BMJ Open* 2019, 9, (10), e030464.
27. Hennink, M. M., *International focus group research: A handbook for the health and social sciences*. Cambridge University Press: Cambridge, 2007.
28. Britten, N., Qualitative interviews. *Qualitative Research in Health Care* 2006, 12-20.
29. Onwuegbuzie, A. J.; Dickinson, W. B.; Leech, N. L.; Zoran, A. G., A qualitative framework for collecting and analyzing data in focus group research. *International Journal of Qualitative Methods* 2009, 8, (3), 1-21.
30. van Teijlingen, E. R.; Hundley, V., The importance of pilot studies. *Social Research Update* 2010, 35, (4), 49-59.
31. McLellan, E.; MacQueen, K. M.; Neidig, J. L., Beyond the qualitative interview: Data preparation and transcription. *Field Methods* 2003, 15, (1), 63-84.
32. Hilal, A. H.; Alabri, S. S., Using NVivo for data analysis in qualitative research. *International Interdisciplinary Journal of Education* 2013, 2, (2), 181-186.
33. Braun, V.; Clarke, V.; Hayfield, N.; Terry, G., Thematic Analysis. In *Handbook of Research Methods in Health Social Sciences*, Liamputtong, P., Ed. Springer Singapore: Singapore, 2019; pp 843-860.

34. Pitchforth, E.; Porter, M.; van Teijlingen, E.; Keenan, K. F., Writing up and presenting qualitative research in family planning and reproductive health care. *Journal of Family Planning and Reproductive Health Care* 2005, 31, (2), 132-135.
35. Tong, A.; Sainsbury, P.; Craig, J., Consolidated criteria for reporting qualitative research (COREQ): a 32-item checklist for interviews and focus groups. *International Journal for Quality in Health Care* 2007, 19, (6), 349-357.
36. Regmi, P. R.; Aryal, N.; Kurmi, O.; Pant, P. R.; van Teijlingen, E.; Wasti, S. P., Informed consent in health research: challenges and barriers in low-and middle-income countries with specific reference to Nepal. *Developing World Bioethics* 2017, 17, (2), 84-89.
37. Regmi, P. R.; van Teijlingen, E. R.; Simkhada, P.; Acharya, D. R., Dating and sex among emerging adults in Nepal. *Journal of Adolescent Research* 2011, 26, (6), 675-700.
38. Acharya, D. R.; Bhattarai, R.; Poobalan, A.; van Teijlingen, E.; Chapman, G., Factors associated with teenage pregnancy in South Asia. *Health Science Journal* 2010, 4, (1), 3-14.
39. Rapaport, M. J.; Vinnik, C.; Zarem, H., Injectable silicone: cause of facial nodules, cellulitis, ulceration, and migration. *Aesthetic Plastic Surgery* 1996, 20, (3), 267-276.
40. Huft, M., Statistically speaking: The high rate of suicidality among transgender youth and access barriers to medical treatment in a society of gender dichotomy. *Children's Legal Rights Journal* 2008, 28, 53.
41. Spicer, S. S., Healthcare needs of the transgender homeless population. *Journal of Gay and Lesbian Mental Health* 2010, 14, (4), 320-339.
42. Stieglitz, K. A., Development, risk, and resilience of transgender youth. *Journal of the Association of Nurses in AIDS Care* 2010, 21, (3), 192-206.
43. Wansom, T.; Guadamuz, T. E.; Vasan, S., Transgender populations and HIV: unique risks, challenges and opportunities. *Journal of Virus Eradication* 2016, 2, (2), 87.