4

Chemical Sexualities

Puerto Princesa is known for its tolerance toward non-heteronormative identities, relationships, and practices,[1] which is visible on the waterfront and in the malls, where people wander expressing diverse gender and sexual identities, enjoying the relative peace of the town. We talked to dancers of the Palawan *Sining* (arts) Dance Troupe, a student collective that is linked to the local state university. One of the dancers was Artista, a third-year college student who had moved to Puerto Princesa from a nearby coastal village. His father was a fisherman and his two older brothers, after graduating from college, both worked to augment the family's income. Since high school, Artista had had a summer job in a hotel that paid him US $60 a month. As a dancer for the University dance troupe, he luckily did not have to pay tuition fees.

Artista told us that when he (his preferred pronoun) was still in high school, he wanted to reduce his Adam's apple (which he found too big) and his muscles, and he wanted to have a more androgynous body with somewhat bigger breasts. Advised by a friend, he began taking contraceptives (four tablets of Micropil and two of Diane), which can be bought over the counter in pharmacies in the Philippines. He explained that he

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refrained from drinking alcohol when using the pills out of fear of drug interactions.

In the beginning, the pills made him feel very dizzy and they made him perspire a lot. He drank a lot of water because he thought that water would help melt his muscles and fill his breasts. When his breasts started growing, he stopped taking the pills for a while, because he feared becoming a man with very big breasts. Then he started using them again, seeking to have breasts that were just the right size.

A few years earlier, when he had enrolled in college, he joined the university dance troupe. In addition to dancing, he was responsible for the maintenance and safekeeping of costumes and accessories and many other objects the troupe used. Carrying these materials around caused his muscles to grow again, so he decided to stop taking contraceptive pills because they no longer were effective in reducing his muscles.

Do-It-Yourself Chemical Sexualities

The focused ethnographies presented in this chapter provide insight into how the young people we spoke with used chemicals to shape sexual bodies, enhance sexual pleasure, foster sexual hygiene, and prevent unwanted pregnancies, all of which we refer to as "chemical sexualities." Some of these chemical practices involved trying different sexual ways of being in the world, as was the case for Artista, while other practices reflected dominant heteronormative gender discourses: men should be virile, and women should be clean, attractive, and take responsibility for preventing unwanted pregnancies.

Our interlocutors used chemicals that are available in pharmacies to achieve their sexual needs and desire. Most of the chemical practices that we describe were "off-label," that is, not in line with a product's formal (that is, approved by the relevant food and drug authority) indication, or purpose. This was the case for the contraceptive hormones that were used by our interlocutors in Puerto Princesa, Jakarta, and Makassar to feminize their bodies and grow breasts, the use of emergency contraceptives as a regular contraceptives by young women in Addis Ababa, and the

use of Viagra by young men, who did not suffer from erectile dysfunction, to enhance the duration of their erections (also in Addis Ababa).[2] Our interlocutors turned to pharmacies to obtain tools to augment their sexual health and well-being, because these access points tended to deal with their needs discreetly. No questions asked.

The pharmaceuticals that young people adapted for their own purposes have not been tested in clinical trials for the indications for which they were used, nor for the dosages at which they were taken. In the absence of medical information, our interlocutors developed bodies of knowledge by observing the drugs' effects on their own bodies, and sharing this lived experience with their peers and the medical professionals in their social networks. They tried out different dosing strategies and different brands and compared results, took advice from friends, shared their personal experiences with others. Some of our respondents were "inspired" by circulating (often pornographic) images, which present hyperfeminine and/or hypermasculine sexualities (Jackson 2009; Preciado 2013).

Through these exchanges, which we refer to here as "collaborative experiments" (see also Hardon and Idrus 2014), our interlocutors generated experiential knowledge. In this collective process, youth sought out what worked best for their individual bodies and minds, and they tried out and mixed products until they achieved a good enough match—referred to as "*cocok*" in Indonesia and "*hiyang*" in the Philippines—a match that was further finetuned by combining the chemicals with specific kinds of food and drink.

In these experiments, users determined their own efficacy parameters: growing hard breast tissue, having a longer lasting erection, feeling aroused, having a tight and perfumed vagina, and inducing menstruation (when it was late). These "endpoints" emerged out of the sharing of experiential knowledge on what specific chemicals can do. Users carefully monitored for adverse effects, and shared experiences of them, tinkering with dosages or substituting products to prevent them. But their efforts to avoid harm tended to focus on short-term and visible effects, rather than potential long-term risks.

In this chapter we shed light on these do-it-yourself chemical sexualities with vignettes from six focused ethnographies by ChemicalYouth

researchers—though there was so much material about sexualities in our fieldwork that we could have filled a whole book with it. Across our field sites, chemicals made it possible for our respondents to try out different gendered and sexual ways of being in the world. As Butler (1993) incisively puts it: sex is not simply what one has, but what materializes through bodily practices. Here, we show how chemicals provided our young interlocutors with options in terms of the kinds of bodies they wanted to try out, the kinds of sexual experiences they wanted to make happen, and the adverse sexual health conditions they sought to prevent. The vignettes presented here are from the Philippines, Indonesia, Ethiopia, and France.

Sexual Health and Well-Being

Sexual health and well-being entered global policy discourses in the 1990s, when feminist health organizations critiqued the narrow focus of family planning programs that aimed simply to reduce fertility without attending to reproductive rights or well-being (Correa and Reichmann 1994; Eager 2017). The 1994 International Conference on Population and Development developed a declaration that was adopted by 180 countries, which stated that people—including youth—should be able to have "a satisfying and safe sex life" (United Nations ICPD 1994). In 2006, a working group of the World Health Organization built on this agreement to define sexual health as follows:

> a state of physical, emotional, mental and social well-being in relation to sexuality; it is not merely the absence of disease, dysfunction or infirmity. Sexual health requires a positive and respectful approach to sexuality and sexual relationships, as well as the possibility of having pleasurable and safe sexual experiences, free of coercion, discrimination and violence. (World Health Organization 2006)[3]

More recently, in 2017, UNESCO published sexuality education guidelines for youth, which among others teach the learners that "Engaging

in sexual behaviours should feel pleasurable and comes with associated responsibilities for one's health and well-being" (UNESCO 2018, p. 72).

Despite such guidance emphasizing that sex should be pleasurable, reproductive health policymakers and health professionals generally approach youth sexuality as a danger zone. They rely on statistics to call for action: about half of the pregnancies among adolescent women aged 15–19 living in developing regions are unintended, and more than half of these end in abortion, often under unsafe conditions (Darroch et al. 2016), and more than 30% of all new HIV infections globally occur among youth aged 15 to 25 years (World Health Organization 2020).

Reproductive health policymakers' solution to these problems has been to offer youth-friendly health services that can provide youth with access to (emergency) contraceptives and condoms. Increasingly, there is a focus on "key populations" (such as people who are gay, transgender, and sex workers), who are at particularly at risk for becoming infected by (and subsequently transmitting) HIV. Because of a failure to increase uptake of condoms, AIDS programs have started providing anti-retroviral drugs through Pre-Exposure Prophylaxis (PrEP) programs to such groups, including young girls who are also considered at risk.

Our ethnographies suggest that these well-intended sexual and reproductive health services are under-used by youth who face cultural barriers when openly seeking such services and/or who fear the side effects of such products. Anthropological research shows that young people may have difficulty communicating with health professionals about contraceptives, preferring to rely on their friends and peers for information and advice (Sweeney et al. 2015). Fine-grained anthropological studies of young women's fertility regulation practices find that they worry that using contraceptive pills every day for preventive purposes increases their risk of infertility (Hardon 1997; Wood and Jewkes 2006). Post-coital methods tend to be preferred, because they can be used after youth have actually had sex and fear becoming pregnant (Hardon 1997; Sobo et al. 2000; van der Sijpt 2012). Interventions targeting high-risk populations also tend to be under-used. In Kisumu, Kenya, a district with a high prevalence of HIV, an evaluation found that only one out of five adolescents and youth who were offered PrEP through youth-friendly services accepted the HIV prevention pills. Their reasons for declining to take

the pills included: they were reluctant to take a daily preventive pill, they found the pills too big or difficult to take, they were afraid of side effects, and they wanted to consult with their sexual partners first.

As with all the chapters of this book, we start with youth practices. How did our youthful interlocutors meet their sexual health needs? What were their concerns, and how were their practices shaped by others? By looking closely at their chemical sexualities, we gain a better understanding of what is at stake in their sexual lives. Our ethnographies show how youth across our field sites used chemicals to enact their sexual desires and needs, while at the same time attending to sexual hygiene and pregnancy prevention, and how they sought advice from friends and acquaintances, including nurses and pharmacists.

We describe four kinds of *do-it-yourself (DIY)* chemical sexualities: taking contraceptive pills off-label in order to shape bodies and try out different sexual ways of being in the world, using chemicals to enhance sexual performance, using chemicals for sexual hygiene and STI prevention, and taking substances to abort unintended pregnancies. Each of these do-it-yourself chemical sexualities involves diverse practices, which we compare and contrast across field sites to gain a better understanding of what is at stake in young people's sexual lives.

Shaping Bodies

We observed young people using chemicals to shape their bodies in Puerto Princesa, a provincial town on the Southern Island of Palawan in the Philippines, and in Makassar, Indonesia. In Puerto Princesa, one of our youth ethnographers described how young men appropriated contraceptive hormones to feminize their bodies (Josol 2017). One of her interlocutors was Artista, whom we introduced at the beginning of this chapter. Artista identified as a man, but wanted to have more feminine features. Another dancer whom we interviewed was Queenie, a first-year college student who said she (preferred pronoun) aspired to win gay beauty pageants. Artista and Queenie experimented with hormonal pills to shape their bodies, and they used female skin creams to perform

feminine beauty, reflecting what some commentators have called the "commodification of modern norms of feminine beauty" (Jackson 2009).

Queenie used Micropil on the advice of a friend to fill out her thin cheeks. She started with eight pills a day. When this didn't have much effect, she tried combining Micropil with Micropil Plus—four of each at lunch and dinner—for a total of 16 pills a day. The first time she took a dose of eight pills she felt dizzy. Her friend reassured her that this was normal. She also developed a strong appetite and slept a lot. Her breasts started to grow. Her auntie, a nurse, knew that she was taking pills and warned her that she might get cancer if she took such large amounts of pills. "Go slow," her auntie said, so Queenie reduced her daily intake of pills to eight.

In addition to taking hormone pills, Artista and Queenie both used facial cleansers and creams to make their skin lighter and softer. Marketed for women, the feminine images in these products' advertisements added to the femininity Artista and Queenie acquired by applying the products to their skin. Artista used Eskinol Baby Face cleanser and Myra E lotion (on the advice of his sister), though he says that his skin is still quite dark because he does a lot of outdoor activities like swimming. Queenie used Pond's Facial Wash, an upscale brand, along with Myra E lotion.

We also explored feminizing practices in Indonesia, among youth who self-identify as *waria*, which is characterized by the dedicated work that male-born people do to feminize their appearance, referred to locally as "*déndong*" (Hegarty 2018). In Indonesia, the desire of male-born people to perform femininity is said to reflect their having a "woman's soul" (Boellstorff 2007, p. 90). The practice of *déndong* involves a range of bodily practices undertaken on a daily basis, including wearing women's clothing and wigs, extensive grooming, and taking pills or wearing prostheses to have visible breasts. *Waria* often work in beauty salons (ideal places to do feminizing work and practice femininity) and on the streets as informal sex workers or musicians. Their sex work involves male clients who are attracted to their transgender femininity. Most of our *waria* interlocutors confided that their biggest aspiration was to get married in a beautiful white wedding dress, and they proudly showed us pictures in which they had dressed up as brides, stored in their phones.

In Makassar and Jakarta, our *waria* respondents explained how, like Artista and Queenie, they used high dosages of contraceptive pills to achieve a feminine body. The explained that when they took contraceptive pills, a basis of tissue emerged in their breasts, which subsequently became the site for the breast to grow. The first sign of success is a small lump. Like Artista and Queenie, they also valued the other feminizing effects of contraceptive pills. Their hips became rounder and muscle volumes were reduced. And, like Queenie and Artista, they also tinkered with doses and combinations of hormones to limit side effects. For example Rara, a 24-year-old *waria* had been consuming two Andalan tablets twice a day. Her breasts grew, but she felt dizzy, bloated, and irritable. After three months she stopped taking the pills, and her breasts became smaller again, though her nipples stayed enlarged. Ayu, another *waria*, had used five to seven pills of Microgynon per day, but this made her feel sick. On the advice of friends, she switched to Diana at a dose of four tablets a day. But she still felt sick, so she lowered the dose first to two pills a day and finally to one pill a day before going to bed.

These feminizing efforts, undertaken by both our *waria* interlocutors in Indonesia and dancers in Puerto Princesa, show that their chemical practices generated diverse gendered ways of being in the world and of expressing and experiencing sexuality. They also adjusted their chemical practices to mitigate adverse effects and fulfill personal body modification aims.

Our interlocutors in both places were aware of how gender may be transformed abroad. They knew that in gender clinics in the Netherlands and the United States, transgender people seeking a feminine body often "go all the way." Male-bodied clients can have breasts implanted, which frees them from taking hormones every day; this is seen as an advantage. Health workers also expect them to undergo vaginoplasty. When all of this is done, they are expected to have their civil status reassigned to female (van Eijk 2014).

But, our informants confided in us, they were not seeking such absolute transformations. And even if they did, they would not be able to afford it. Talking further about the surgical options, they all said that they didn't necessarily want to have a vagina, which is a common view in Asian settings. Our *waria* interlocutors explained that their penises

serve them well in the sex work that many of them did to earn a living; some of their male clients want to be penetrated. One added that they would not want to be buried with a vagina, if only out of respect for their parents who live in a rural village, and are not (yet) aware of their urban life as *waria*. We probed in focus group discussions into our interlocutors' aspirations for the future and found that many of them feared that they would not live long. They had already lost friends due to violence and (sexually transmitted) disease, and they knew that their heavy use of hormones was not healthy.

Enhancing Sexual Experiences

Across the sites, we also encountered DIY chemical practices to enhance sexual performance. We examined these practices in focused ethnographies in Indonesia (Hardon and Idrus 2014; Pakasi 2018) and Ethiopia (Both 2017), countries where prevailing gender norms assign physical strength, sex drive, and bravery to men, and where expectations for these are fueled by pornographic images that circulate online and in print. We found that these are also contexts where young men have difficulty living up to these unrealistic norms. More and more, young women are taking over male roles in the job market, and becoming more assertive (Both 2017; Handajani 2008).

In Indonesia, companies selling herbal medicines, food supplements, and energy drinks promote a wide range of sexual enhancement products through mass media and online. Often these products contain ginseng, a substance that has been clinically proven to improve male sex drive (Kotta et al. 2013). These products are referred to locally as "*obat kuat*" (strength/potency-enhancing medicines (Beers 2001). Hormoviton and Sparta X are two popular herbal preparations, and KukuBima is a popular energy drink. The packaging for KukuBima reflects the bodily strength and virility that young men are expected to perform (Fig. 4.1); the packaging for a Sparta X depicts a man with warrior-like features (see Fig. 4.2). The online site for Sparta X, for example, shows a young woman and a young man in a bed; he appears to suffer from sexual dysfunction and she is not happy.

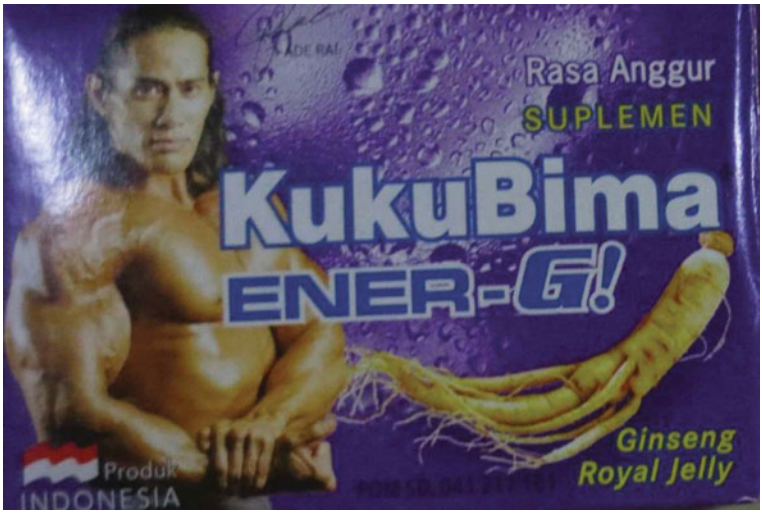

Fig. 4.1 KukuBima energy drink (*Source* Photo taken by Anita Hardon, October 15, 2019, Indonesia)

Fig. 4.2 A package of Sparta X, an "herbal Viagra" (*Source* Photo taken by Anita Hardon, October 15, 2019, Indonesia)

The young men whom we interviewed in Makassar drank KukuBima regularly, but they refrained from taking herbal tablets such as Sparta X, as they were worried about side effects. They had heard rumors that the pills were bad for one's heart and can cause black shadows under your eyes. They preferred to use erection-enhancing tissues, with evocative names such as Super Magic Man (see Fig. 4.3) and Magic Power. We only heard about the use of these tissues after several months of fieldwork, when one of our *waria* interlocutor's mentioned that using Super Magic Man during sex work, to enhance the strength of his erection (which was weakened due to her use of hormones to grow breasts). The

Fig. 4.3 Package of Super Magic Man Tissue to control premature ejaculation (*Source* Photo taken by Anita Hardon, October 20, 2016, Indonesia)

tissues are promoted through social media and through online marketing sites selling *obat kuat* (Hardon and Idrus 2015).

One such online store describes Super Magic Man as a tool to enhance (both male and female) sexual pleasure and to prevent sexually transmitted disease: "In addition to creating a long-lasting erection, it is also a product that makes you more hygienic and clean. So you can relax during sex because you are protected with an antibacterial antiseptic against venereal disease." The website provides the following product information:

> Super Magic Man Tissue is a herbal based antiseptic tissue that can be used to refresh and cleanse penis skins effectively, preventing bacterial/antiseptic, increase strength of sexual intercourse and prevent premature ejaculation. It can make you last all night long.
>
> Ingredients: Alcohol, Benzalkonium Chlorida, Triclosan, Cocomidopropyl, Betaine, PEG-78, Glyceryl Cocoate, Purified Water.
>
> Indications:
>
> As an antiseptic, to prevent sex transmitted disease
>
> – Maintain the health of the male organ
> – Extend the penetration
> – Prevent premature ejaculation
> – Powerful erection
>
> Directions: Wipe the entire length of the penis with the Super Magic Man Tissue. Then wrap the tissue around the penis for 5 to 15 minutes. Now you should be ready for sexual intercourse and have better control of ejaculation. (Hardon and Idrus 2015, p. 55; see also Ayden Store 2017)

We bought a packet of these tissues from a local grocery store and had them on the table during a focus group discussion with young men in a karaoke bar. Seeing the product made it easier for them to talk about the way they use it. Mali, a construction worker, said that when using the tissues his erection lasts for about one hour; without tissues he can only keep his erection going for around 15 minutes (Hardon and Idrus 2015).

We realized that many of the young men lacked confidence that they could be good lovers without some help, a finding we also encountered

with our interlocutors in Addis Ababa, who worried that their sexual partners may not be satisfied, and might gossip about their less than optimal performance to others. Although the tissues are considered to be safer than virility-enhancing herbal tablets like Sparta X, they are not without side effects. Young men said that the tissues kill the good sensation (*mati rasa*), and/or made their penis feel tender (*perih*) and sore (*pedih*) when having sex. Young women whom we interviewed in Makassar also complained about side effects of the tissues, saying that they made their vaginas feel sore. And despite men's aim to please women by lasting longer, none of our female interlocutors were happy with the longer duration of the erections of their sexual partners (Hardon and Idrus 2015).

We found more elaborate penis-enhancement techniques in Jayapura, West Papua, a region of Indonesia that is known for *bungkus*, the traditional wrapping of leaves around the penis to create a strong and long-lasting erection. Young indigenous men in West Papua grow up with few chances to get ahead in life, as they are oppressed by military forces and outnumbered by men from other regions of Indonesia. Some of our informants echoed our interlocutors from Makassar about wanting to have a long-lasting erection in order to please their sexual partners, but in Jayapura we also found more violent narratives of men seeking to perform "*jago*" (literally fighting cock) masculinity, that is, about being a "virile man, whose penis and sexual prowess are a champion among peers, capable of dominating women sexually" (Pakasi 2018, p. 154).

Apart from wanting to please and/or dominate women, we also observed that young men enjoyed enhancing their erections together. The often lived together in boarding houses in town, where they met up with traditional *bungkus* providers. These practices formed a "collective reinforcement of manhood and sexuality (Pakasi 2018, p. 86). Freddy, for example, told us how he and his high school peers did *bungkus* together, lining up to have their penises wrapped by the *bungkus* doctor. As a result their penises were enlarged, though Freddy is not sure if they were becoming larger than normal. He also said they suffered from adverse effects including rashes and a burning sensation.

In a different setting, in Addis Ababa, Ethiopia, we found that young men preferred using modern pharmaceuticals to enhance sexual pleasure. They stuck to generic and therefore cheaper versions of Viagra, bought over the counter in pharmacies. In Ethiopia, young men are encouraged to engage in sexual encounters to develop their sexual skills for marriage (Tadele 2006). Young men feel frustrated because they are expected to achieve financial or social success, but have a hard time finding jobs (Heinonen 2011; Mains 2013). Unemployed men spend hours chewing *khat,* which is not good for their libido, and the increased circulation of pornographic images and films through social media negatively affects their sexual confidence.

Desta, a 26-year-old college graduate, explained how he met a girl he wanted to have sex with. He was nervous because it was his first time; he believed that men ejaculate too quickly when having sex for the first time and that women dislike this. He voiced his worries to a good friend who not only advised him to use Viagra but also bought the drug for him. Desta was to meet his girlfriend at the guesthouse where he was renting a room. He decided to take the pill several hours before her arrival as he believed the cheap pill could not be strong. But he soon got an erection and had to ask his girlfriend to hurry over. When she arrived they enjoyed sex for several hours. Desta's girlfriend reached orgasm first and was pleased with his performance; he recalled: "My girlfriend cried after the sex. She found it so amazing, telling me *bet'am des yilal*! [I love it!]. But I was tricking her. This was not my own strength, it was artificial" (Both 2015, p. 500). Desta said he experienced tiredness after ejaculating, and his erection did not go away; he had to cool his penis in a bucket. Desti stopped using Viagra after a while, because he didn't like using a medicine with side effects (Both 2015).

Underlying young men's pervasive use of Viagra are the high expectations for "good sex." Without drugs, our interlocutors say they can perform three rounds of sex in a night, with an erection lasting about five to ten minutes each time, while on Viagra they can have five rounds, each lasting 30 minutes. As in Indonesia, our female informants in Addis Ababa did not necessarily value these multiple and extended rounds of sex. They complained that their lovers did not engage in foreplay, just like in the porn clips that men frequently watched. Women also said that they

were not interested in the multiple sex positions that their lovers wanted to try out, but rather were seeking compatibility in sex, which they said is achieved when both sexual partners experienced pleasure.

Another chemical sexuality known as "chem sex," has emerged in the gay party scene, which involves, amongst other drug using practices, injecting narcotic substances during sexual activity in order to enhance sexual pleasure. Public health professionals are disturbed about the HIV transmission risks that accompany these chemical ways of relating, while some social analysts have pointed out that these injection parties need to be understood as a form of liberation for gay communities who have been seriously affected by the HIV epidemic (Fournier 2010; Gaissad 2013).

One of our focused ethnographies, a study done in Paris, explored gay men's use of chemicals such as cocaine, MDMA, ketamine, and methamphetamine, as well as newer designer drugs, to enhance sexual pleasure. We observed that many of our interlocutors were especially interested in the bonding effects of shared pleasure. As one man explained:

> My best drug-taking experience was an injection of GBL and Meth, during a duo session we organized … We thought it out this way: Let's put some music on and light some candles and let's do this really odd thing, a romantic drug-use session. So we injected catheters in our arms, the room was already heated. All we had to do was to put the needle in our arm, that's all. (Amaro 2016, p. 221)

Another informant, a 23-year-old student, described how his "slamming"[4] practice evolved over time:

> We met during a slamming session. And mephedrone [a synthetic stimulant] helped. You're in love with everybody, it may have eased the beginning of our story as a couple, maybe a bit too much? In the beginning, it was my boyfriend who injected me. We began in the evening at six, and told ourselves we would stop at midnight, and we found ourselves still going at ten in the morning, while we were supposed to be at work. (Amaro 2016, p. 222)

Amaro, one of our youth ethnographers, suggests that practices of injecting drug use are entangled with the search for love (see Amaro 2016). Injecting together is experienced as a sign of trust and love, and thereby facilitates bonding between sexual partners.

Enhancing Sexual Hygiene

The third DIY chemical sexuality involves taking substances to enhance sexual hygiene and prevent disease. We have seen how young men in Makassar used tissues to clean their penises before sex, but still, more often than not, we found that, despite changing gender norms, women took more responsibility for hygiene and preventing sexually transmitted diseases. In our fieldwork in Makassar (Indonesia) and Cagayan de Oro (Philippines), our ethnographers found that young women, who were at high risk of acquiring HIV infections due to their sex work, ensured their sexual hygiene by using vaginal washes on a daily basis, just like body soap and toothpaste. In Indonesia, the washes generally contain liquid betel leaves, which have antiseptic properties (Sommer et al. 2016).

Resik-V, with "resik" meaning "tight," is a very popular brand among women who do sex work. The front of the bottle that we bought in a supermarket states: "Fragrant and tight, especially for female areas" (see Fig. 4.4). The back of the bottle states: "Resik-V Feminine contains betel extract and other ingredients that help to reduce odors and clean the feminine area. Use Resik-V feminine wash while bathing" (Hardon and Idrus 2015, p. 55).

Our female interlocutors explained that their clients valued them having tight and fragrant vaginas. They told us that their work makes them feel *kotor* (dirty). They like Resik-V because it comes in different scents (rose, lily, orchid, jasmine), so they can choose the one they like. In addition to using vaginal washes, our informants use antibiotics (such as ampicillin or amoxicillin) before and after sex to prevent infections. They could buy antibiotics without a prescription in pharmacies and market stalls. They said they rarely use condoms, because their clients did not want to use them, and they believed that Resik-V and antibiotics would protect them.

Fig. 4.4 Resik-V feminine wash (*Source* Photo taken by Anita Hardon, October 20, 2016, Indonesia)

Vaginal washes are also popular in the Philippines. They are prominently positioned in drugstores and supermarkets. The ChemicalYouth ethnographers observed the use of vaginal washes in Cagayan de Oro, a city with a thriving sex trade. The city has an estimated 500 registered sex workers who are employed in bars and clubs, and many more informal sex workers on the streets. We contacted street sex workers through a local security guard, Kuya Boy, who also worked as a male sex worker and frequently referred clients to his female peers. We found that many sex workers end up on the streets because of poverty or having lost their virginity due to sexual violence. The sex workers used vaginal washes before sex because their customers usually examined their vaginas before buying their services. The sex workers explained that customers differ in what they want: some want light-colored vaginas, while others demand shaved or fleshy ones. But all men are particular about smell. As one of our interlocutors in Cagayan told us, "It is more important to smell nice, because when a customer uses you and your vaginal smells awful, he will complain and get angry" (Famaloan and Reyes 2018, p. 88). Having a

good smelling vagina requires washing it often, as Nenen explains: "I wash my vagina three times a day, morning, afternoon, and evening, to keep it from smelling awful" (Famaloan and Reyes 2018, p. 88). One of her peers, Tata, said she uses a feminine wash every time she urinates. The sex workers in Cagayan de Oro used the Lactacyd pH Care brand; others, who could not afford it, just used Safeguard soap (known for its antibacterial properties) or toothpaste to freshen up their vaginas. The streetworkers invested in their vaginas because, as one of the streetwalkers explained, "The vagina can help you make money" (Famaloan and Reyes 2018, p. 88).

The sex workers in Cagayan de Oro went regularly to the city health clinic for check-ups. The city offers STI tests to prevent the transmission HIV and other sexually transmitted infections. They also give free condoms to sex workers; here, sex workers told us that they refused customers who did not want to use condoms. Sophia, one of the sex workers asserted, "the customer really needs to use a condom always! Never mind if he has a big budget. If you get sick, you lose everything" (Famaloan and Reyes 2018, p. 80).

While global policymakers are concerned about the lack of uptake of condoms, and have started giving women at risk PrEP to protect themselves in some settings, our ethnographies show that women widely use vaginal washes to prevent sexually transmitted diseases. The problem with these washes is that their efficacy in promoting vaginal health and preventing disease is understudied. But some female-controlled methods do indeed prevent infections, such as microbicides and vaginal condoms, which despite much global health investment are not accessible in our study sites. Elsewhere I have argued that more should be done to widely disseminate such methods (Hardon et al. 2012).

Preventing Unwanted Pregnancies

Our ethnographies show that women also took responsibility for avoiding unplanned pregnancies, though across our sites we did see men helping them get ahold of the chemicals to do so. Our fieldwork among students in Makassar found that they used various brands of contraceptive pills and injections to prevent pregnancy. Rossa (24) and her

boyfriend were advised to use Andalan birth control pills by a friend who was also a doctor. Mawar's boyfriend bought Microgynon pills for her, which she used before having sex. After sex, she drank Sprite to enhance the pill's efficacy, having heard about this combination from a friend. Ara used Andalan every time she had sex with her boyfriend, without her boyfriend knowing. Her boyfriend did what most young men do in Makassar to prevent conception: coitus interruptus. Ara combined Andalan with *Kiranti Sehat Datang Bulan*, a *jamu* (local term for herbal medication) for healthy menstruation. Young women in Makassar liked using "the pill" to regulate fertility because it came with added benefits. Ika, a 22-year-old, used Microgynon birth control pills to treat her acne, on the advice of a friend who used it for that purpose. Ika not only swallowed the Microgynon pills, but also ground them, mixed the powder with water, and applied the paste to her face (Idrus 2018).

In contrast, our female interlocutors in Ethiopia and the Philippines generally did not use contraceptives, despite being sexually active. They refrained from doing so, they said, because they did not engage in sex frequently and they feared that taking a pill every day would cause side effects, such as headaches and infertility. Also, they preferred not to use contraceptive pills, because they didn't want family members to find out that they were engaging in sex; living in cramped spaces with their parents, they explained, it would be easy for their mothers or siblings to find the pills. This was not a concern among the students we interviewed in Makassar, who were not living at home. Instead, women relied on post-coital methods, which they could use after they had had sex, or if they feared they were pregnant because their menstruation was delayed. They heard about these post-coital methods from friends and siblings, and obtained chemicals for them over the counter in pharmacies.

In Addis Ababa, the preferred fertility-regulating method is Postpill, an emergency contraception that is available over the counter in pharmacies. Emergency contraceptives, similar to regular contraceptives, contain a combination of estrogen and progestin, but at a higher dose than regular pills, and are used within 72 hours after unprotected intercourse.

When talking to young people about Postpill, our respondents pointed to its popularity with comments like: "It will be hard to find a female student who does not carry a Postpill in her bag" and "Postpills are

popped like candy" (Both 2015, p. 60). Both's respondents preferred Postpill because they could buy it after sex had occurred. Helen, a 23-year-old female BA student, said, "Postpill is easy to use because you only take it once" (Both 2015, p. 62). Mi'iraf, a 29-year-old female MA student said, "speaking from my experience, Postpills are convenient because I have sex irregularly and you can take it after sex" (Both 2015, p. 62).

In the Philippines, young women do not have access to emergency contraceptives, because the Catholic Church has opposed their distribution. They therefore take action when they find out that their menstruation is delayed, trying all kinds of chemicals, such as mixing pharmaceuticals with Sprite and using herbal concoctions advised by traditional healers. If these did not work, some of them turned to Cytotec, a prostaglandin that is on the market for the treatment of ulcers in both countries. In the Netherlands and France (and elsewhere), the active ingredient of Cytotec, misoprostol, is one of the two active ingredients of the abortion pill. The abortion pill contains both an anti-estrogen (mifepristone) and a prostaglandin (misoprostol), which in combination has proven to be an effective abortifacient if used in the first 40 days after conception. Because mifepristone is a registered abortion drug, its sale and use are not permitted in most countries that have restrictive abortion laws. Misoprostol, however, is also an anti-ulcer medication, which is why it is allowed to be on the market in the Philippines under the brand name Cytotec.

Research has found that misoprostol alone is about 75–85% successful in inducing abortion in the first trimester: four tablets are recommended to initiate an early abortion, and four (or, rarely, eight) more may be required for its completion. It is best to use misoprostol within 63 days counting from the first day of the last regular period.

However, Cytotec is hard to get, as pharmacies are not allowed to sell it over the counter. Ethnographer Leo Diego tells the story of Lily, who was a high school student in Roxas, a small town on the island of Palawan, the Philippines. Lily had a boyfriend and became pregnant, which led her to consult friends who had experienced an abortion. On their advice, she first took a concoction of *malunggay* roots for one week, but this did not work. She then tried drinking a mix of the energy drink Cobra and Coke for two weeks, which she stopped because she suffered from

stomach aches, nausea, and dizziness. Feeling that they were too young to have a family on their own, she and her boyfriend decided to consult a traditional midwife (*hilot*), who massaged her belly and sold her Cytotec, which she was to insert in her vagina. This hybrid procedure eventually resulted in an abortion, which left Lily feeling very weak. After weeks of stress and pain caused by the massages and the abortion itself, she wanted to forget about the incident. Lily broke up with her boyfriend and found it hard to keep the incident secret from her family. She also had to pay her debt of US $60 to the *hilot*, which was a lot of money for a high school student.

Co-creating Youth-Sensitive Sexual Health Products

The contraceptive pill came on the market in the 1960s, building on the research of pre-war reproductive biologists who discovered that naturally occurring estrogens and progestins could be used to prevent conception. Clinical researchers designed the contraceptive pill such that it would be taken on a daily basis, while also allowing women to have their monthly period. In the past decades, following the aims of the ICPD to provide reproductive choice, many new forms of administering contraceptives (hormonal vaginal rings, injections, implants, and pills) have come on the market, along with emergency contraceptives and abortion pills. However, despite global commitments to the sexual health of youth, these technologies fail to meet the sexual health aspirations of young people at our field sites. For example, while young women were happy with using emergency contraceptives as a mode of fertility regulation, it was only made available to them as the Postpill, or Plan B. Why not as Plan A, for women who occasionally have sex? And why does comprehensive sex education not address the needs of transgender women who want to grow breasts?

Educators and reproductive scientists, if they are serious about promoting sexual health, should attend to young people's diverse gender-bending aspirations and to their many desires for sexual hygiene, disease protection, performance, and pleasure. They should also attend to the

realities of young people's sexual lives, which call for post-coital contraceptive options. Family planners could consider providing emergency contraception through youth-friendly services, specifically for girls who have sex irregularly. This would acknowledge their reluctance to swallow a contraceptive pill every day. Reproductive health programs could advise *waria* how to safely use contraceptive hormones to grow breasts, and point them to the pros and cons of contraceptive pills vis-a-vis alternatives such as having breast implants. Educational strategies could be used to teach young men to talk with their lovers about their sexual desires, which may increase their sexual confidence. Young men need to know that wet tissues will not prevent the transmission of HIV, and students should be informed that taking contraceptives before and after sex is not an effective way to prevent pregnancy. Young women who face an unwanted pregnancy in settings where they have difficulty accessing contraceptives need to know how misoprostol can be used effectively and safely, and where they can order these pills without paying exorbitant fees to local abortionists. Taken together, this means that educators and designers of reproductive health technologies need to acknowledge the embodied ways that young people express their sexuality and learn from their collaborative chemical experiments (Hardon et al. 2019). They could invite young people to join in the co-production of better chemicals for sex. The learning objectives of comprehensive sex education, highlighted in the introduction, and, more specifically, attention to sexual pleasure, gender diversity, and the relational dimensions of sexuality fit well with young people's concerns and practices.

Such educational approaches could be further strengthened if they were built into peer knowledge sharing, if they worked with grassroots organizations trying out sexual health technologies, and if they provided medical information tailored to the chemical sexualities of youth.

In Conclusion

This chapter provides further insight into how youth make chemicals efficacious in response to their everyday concerns. In the introduction to this book, we characterized chemicals as "informed materials" that are rendered efficacious in laboratories, therapeutic settings, and everyday

lives. While family planners and sexual health advocates seek to educate youth on unambiguous benefits and harms, our researchers found that young people used many chemicals off-label—that is, not in line with medical guidance—to achieve their sexual needs and desires. This was the case for the use of contraceptive hormones to feminize bodies and grow breasts, the use of emergency contraceptives as a primary contraceptive method, and the use of Viagra by young men to enhance the duration of their erections. Our informants tinkered with dosages and indications to achieve beneficial effects, while also monitoring their bodies for adverse effects. They shared experiences with each other and gave new users advice. These appropriations are also a kind of collaborative experiment, rearticulating chemical efficacies, and informing chemicals in new ways.

How does the informing of chemicals through such collaborative experimentation differ from that of scientific medical experiments, referred to as randomized controlled trials (RCTs), that are designed to generate knowledge about chemical efficacies? We asked ourselves this and answered it as follows (see also Hardon and Idrus 2014). First, RCTs measure the effects of specific chemicals on individual bodies, with the "double-blind" method ensuring that both the users of the products and those administering them do not know whether the active ingredient or an inert substance is ingested (Goldstein 2012). Collaborative youth-led experiments also evaluate the effects of chemicals, but through self-observation, rather than with a control group.

A second difference is that RCTs define specific outcomes prior to an experiment. In collaborative experimentation, in contrast, young people try out chemicals and observe what happens based on information that they receive from peers. They find out through their experiments what chemicals can do, such as the development of hard tissue and a base for breasts in the case of contraceptive steroids, or feeling confident when dating in the case of Viagra. These "endpoints" emerge out of the sharing of experiential knowledge on what specific drugs can do to alter sexual experiences and gendered ways of being in the world.

Third, youth-led experiments differ from RCTs in how they investigate adverse effects. Prior to a trial, clinical researchers define the kinds of adverse effects that may emerge, and then during the trial they measure

these in standardized ways. They do so because scientific evidence on safety and efficacy needs to be submitted to regulatory agencies, which then weigh a drug's benefits and risks. This means that unexpected side effects that emerge during a trial are not likely to be examined. In contrast, our researchers found that youth experimenters observed broadly what the effects of a chemical were on their bodies, and then tinkered with dosages or substituted a chemical to reduce unwanted effects.

A fourth difference between RCTs and youth-led collaborative experiments with drugs pertains to how drugs are administered. Drugs in laboratory experiments are tested in isolation and in fixed dosages to allow for the standardized measurement of effects. Youths, in contrast, "tried out" different dosages and forms of administration, mixing substances with drinks, foods, and other drugs in their quest for better, stronger, or faster effects.

Finally, RCTs assume a universal body (Goldstein 2012; Adams 2016). If substance A is proven to be effective in population B, it is assumed to work identically in population C as well. In contrast, in assessing the effects of substances on their bodies, youth start from the assumption that chemicals need to be attuned to their bodies. We saw how they did so using relational notions of compatibility, such as *cocok* (in Indonesia) and *hiyang* (in the Philippines). A drug is cocok or hiyang if there is a "fit" between the drug and the person taking the drug. This notion that a drug may have different effects aligns with a new trend called "personalized medicine." But, this approach still has no place in standard clinical experiments on new drugs, which are generally funded by pharmaceutical companies. Pharmaceutical companies would rather base testing on the premise of universal bodies, as too much diversity would limit the market for specific drugs (Epstein 2003).

While RCTs are designed to "fix" the evidence of a substance's safety and efficacy, and thus inform chemicals for specific medical indications, youth appropriate products that they buy in pharmacies and rearticulate efficacies for their everyday sexual needs. They develop their own experiential and relational understandings of what chemicals do—trying out substances, mixing them with food and drinks, experimenting with

dosage and administration, and sharing what they learn with peers—using these collaborative experiments in their quests for a good life (Hardon and Idrus 2014). Sexual health policymakers could learn from such experiments, as they reveal young people's sexual health desires and needs. Young people, we suggest, should become collaborators in future research on sexual and reproductive health technologies, making sure they fit with their everyday realities and sexual desires (Hardon et al. 2019).

ChemicalYouth Ethnographers

Diana Pakasi is a researcher at the Center for Gender and Sexuality Studies, University of Indonesia. Under the ChemicalYouth project, her PhD research looked at the practices of penis and sexual enhancement in order to understand evolving masculinities in West Papua. Based on the project, she published a book chapter titled "Virility Medicines and Changing Sexualities in Precarious Transformations in West Papua" in the Sage Handbook of Global Sexualities (Fig. 4.5).

Fig. 4.5 Diana Pakasi

Rosalijn Both is a researcher at Rutgers, an international center of expertise on sexual and reproductive health and rights in the Netherlands. Her PhD research focused on young people's use of sexual and reproductive health technologies (e.g., emergency contraceptives & sildenafil citrate) in Addis Ababa, Ethiopia. Rosalijn has also worked on livelihood and HIV-related research and intervention designs in Ethiopia, Kenya, Zimbabwe, and Zambia (Fig. 4.6).

Fig. 4.6 Rosalijn Both

Romain Amaro was a researcher for the ChemicalYouth project and contributed to the project with an ethnography on young gay men engaging in risky sexual and substances use practices. This study reflected his interests in sociology of health, gender, sexuality, and mental health. He is currently a doctoral candidate at the University of Paris (Fig. 4.7).

Fig. 4.7 Romain Amaro

Floralice Basco Rengel-Josol was a researcher for the ChemicalYouth project and conducted fieldwork on gender identities and chemical use among young students in the Philippines.

Notes

1. Heteronormative is a term used to refer to identities, relationships and structures reinforce hegemonic notions of masculinity and femininity. Non-heteronormativity, in contrast, refers to forms of gender and sexuality that

question and transcend this normative order, and leave "open the possibility that the dynamics at play may be a matter of gender, sex, sexuality or yet other categories" (Alexeyeff and Besnier 2014, p. 2).

2. Viagra, now sold as a treatment for erectile dysfunction, has an interesting chemical history. Its pharmaceutical content (sildenafil) was originally developed and tested by Pfizer for the treatment of high blood pressure and chest pain due to heart disease. In clinical trials, researchers discovered that the drug was more effective at inducing erections than treating heart conditions; male trial subjects didn't want to stop using the pharmaceutical because of this secondary efficacy. This led to new trials in which the endpoint was erectile dysfunction, an indication for which it is registered in most countries in the world (Holt 2009).
3. Expanding on this broad definition of sexual health, the World Health Organization now defines sexuality in a way that encompasses sex, gender identities and roles, sexual orientation, eroticism, pleasure, intimacy, and reproduction. It recognizes that sexuality is experienced and expressed in "thoughts, fantasies, desires, beliefs, attitudes, values, behaviours, practices, roles and relationships" (World Health Organization 2006).
4. A term used to refer to injecting drugs in recreational settings.

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