



LUND
UNIVERSITY

Lund University Master of Science in
International Development and Management
May, 2018

HIV in Ukraine: An Everlasting Epidemic?

Assessment of knowledge, behaviour change, tolerance towards people living with HIV and accessibility of healthcare services for HIV among adolescent girls and young women in Ukraine.

Author: Sonja Charlotte Margot Bloch
Supervisor: Tobias Axelsson

Abstract

Ukraine has the second highest rates of the human immunodeficiency virus (HIV) in Europe and struggles with the HIV epidemic since the 1990s. Adolescent girls and young women (AGYW) are especially vulnerable due to their social position and biological characteristics. The HIV incidence is still on the rise, which is also fostered by the ongoing conflict in the East, although a great number of national and international organisations support the country in fighting the autoimmune disease. This research aimed to answer the question *How prevention projects can influence HIV prevalence among AGYW in Ukraine?* The study applied a mixed methods approach using both quantitative and qualitative data. It focused on changes in knowledge, behaviour (condom use and being tested), tolerance towards people living with HIV (PLHIV) and satisfaction with healthcare services for HIV. The results show that even though AGYW in Ukraine have high levels of knowledge about HIV, it is not reflected in their preventive behaviour. Further, the group shows low tolerance towards PLHIV. However, particular reasons were not found in the qualitative data. Finally, AGYW are satisfied with the services regarding testing for HIV, which are in contrast to the general state of the Ukrainian health system.

Keywords: HIV, health prevention, project effectiveness, gender equality

Acknowledgements

I would like to thank my supervisor Tobias Axelsson for his support throughout the writing process. He provided inspiration and guidance, which helped me to focus and write this thesis. I would also like to thank Kateryna Korenkova, Yuliya Kyrylova and The German Development Cooperation (GIZ) GmbH in Ukraine for giving me access to data about awareness of HIV in Ukraine as well as for supporting me in the translation process.

Table of Contents

Abstract.....	1
Acknowledgements.....	1
List of Figures.....	3
List of Tables.....	3
Abbreviations & Acronyms.....	4
Definitions.....	4
1) Introduction.....	1
1.1) HIV – An Everlasting Epidemic?.....	1
1.2) About HIV.....	2
1.3) Global & European HIV Situation & Preventive Strategies.....	3
1.4) Health System, -Situation & Preventive Strategies in Ukraine.....	4
1.4.1) The Ukrainian Health System.....	5
1.4.2) Health & HIV in Ukraine.....	5
1.5) Ukraine at a Glance.....	9
1.5.1) Gender Equality in Ukraine.....	9
2) Theoretical Groundings & Key Concepts of HIV Prevention Projects.....	10
2.1) Outcomes of Health Promotion Projects & Programmes.....	10
2.2) Theories of Behaviour Change in Relation to HIV Prevention.....	12
2.3) Health Literacy.....	13
2.4) Equity & Access to Healthcare.....	14
2.5) Gender Equality.....	14
2.6) A Theoretical Framework for Assessing the Influence of HIV Prevention Projects....	15
3) Review of Existing Research on HIV Prevention Projects.....	17
3.1) Findings.....	17
3.1.1) HIV/AIDS from a Global, Historical & Ukrainian Perspective.....	17
3.1.2) Health Promotion Actions & Outcomes.....	18
3.1.3) Intermediate Health Outcomes.....	19
3.1.4) Gender Aspect.....	20
3.2) Conclusion of the Literature Review.....	20
4) Methodology for the Quantitative & Qualitative Data.....	21
4.1) Mixed Methods: A Definition.....	21
4.2) Design.....	21
4.3) Philosophical Foundations for Using Mixed Methods Research.....	22
5) Description of Data.....	22
5.1) Quantitative Data.....	22
5.2) Qualitative Data.....	25
5.3) Challenges Resulting from the Mixed Methods Study.....	26
5.4) Ethical considerations.....	27
5.4.1) Positionality.....	27
5.5) Reliability, Validity & Trustworthiness of Data.....	28

6) Results & Findings.....	29
6.1) Results of the Quantitative Analysis	29
6.1.1) Health Outcomes	29
6.1.2) Health Promotion Actions & Outcomes	30
6.1.3) Intermediate Health Outcomes.....	33
6.2) Findings of Qualitative Interviews.....	33
6.2.1) Health Promotion Actions & Outcomes	33
6.2.2) Intermediate Health Outcomes.....	35
6.2.3) Silence around the HIV Situation	36
7) Discussion	37
7.1) Health Promotion Actions & Outcomes.....	37
7.2) Intermediate Health Outcomes	39
7.3) Health Outcomes & Gender Equality in Ukraine	40
8) Concluding Remarks.....	42
9) Appendix.....	58

List of Figures

1: Global HIV prevalence with details for selected countries in 2016.....	3
2: Different age and population groups living with HIV in Ukraine in 2016.....	6
3: HIV testing and treatment facilities in Ukraine.....	7
4: Location of testing and treatment facilities in Kiev.....	8
5: Outcome model for health promotion.....	11
6: Theoretical framework for assessing the outcomes of HIV prevention projects (adapted outcome model).....	16
7: Design of the mixed method study.....	21
8: People living with HIV in Ukraine 2000 and 2014 to 2016/2017.....	29
9: Knowledge of Ukrainian females, youth and female youth 2014 to 2017.....	30
10: Condom use of Ukrainian females, youth and female youth 2014 to 2017.....	31
11: HIV-testing of Ukrainian females, youth and female youth 2014 to 2017.....	32
<i>Appendix</i>	
12: Post-interview questionnaire.....	63
13: Interview guide.....	64
14: Consent form.....	66
15: Discriminatory behaviour of Ukrainian females, youth and female youth 2014 to 2017....	67
16: HIV-healthcare satisfaction of Ukrainian females, youth and female youth 2014 to 2017..	67

List of Tables

1: Overview: Description of quantitative datasets.....	23
2: Choice of indicators to measure the influence of HIV prevention projects.....	24
3: Overview: Qualitative interviews.....	25
<i>Appendix</i>	
4: Main national and international HIV prevention projects/programmes in Ukraine.....	58
5: Overview: Quantitative data collection process according to GfK research group.....	60
6: Meaning of the different chosen variables.....	61
7: Change in N by focus group and year.....	62
8: 2017: Testing of males vs. females in Ukraine (answer 1-3).....	68
9: Influence of HIV Prevention Projects on adolescent girls and young women in Ukraine..	68

Abbreviations & Acronyms

AGYW	–	Adolescent Girls and Young Women
AIDS	–	Acquired Immune Deficiency Syndrome
ART	–	Antiretroviral therapy
ECDC	–	European Centre for Disease Control
GIZ	–	German Development Cooperation (Deutsche Gesellschaft für Internationale Zusammenarbeit GmbH)
HBM	–	Health Belief Model
HIV	–	Human Immunodeficiency Virus
IDPs	–	Internally displaced people
LGBTQ+	–	Lesbian, gay, bisexual, transsexual, queer and other
PLHIV	–	People Living with HIV
PHC	–	Ukrainian Public Health Centre
SDGs	–	Sustainable Development Goals
TB	–	Tuberculosis
UNAIDS	–	Joint United Nations Programme on HIV/AIDS
WHO	–	World Health Organization

Definitions

Adolescent girls and young women: Young females aged 15 to 24 years.

Epidemic: “The occurrence in a community or region of cases of an illness, specific health-related behaviour, or other health-related events clearly in excess of normal expectancy. The community or region and the period in which the cases occur are specified precisely. The number of cases indicating the presence of an epidemic varies according to the agent, size, and type of population exposed, previous experience or lack of exposure to the disease, and time and place of occurrence” (World Health Organization 2018a).

Prevalence: “Prevalence [...] is the proportion of persons in a population who have a particular disease or attribute at a specified point in time or over a specified period of time” (Center for Disease Control and Prevention 2012).

Incidence: “Incidence refers to the occurrence of new cases of disease or injury in a population over a specified period of time” (Center for Disease Control and Prevention 2012).

1) Introduction

1.1) HIV – An Everlasting Epidemic?

In the end of 2016, the human immunodeficiency virus (HIV) continues to affect 36.7 million people worldwide (World Health Organization [WHO] 2017a). Among the most vulnerable are adolescent girls and young women (AGYW) who account for double the amount of HIV infections globally compared to their young male counterparts making AGYW one of the key vulnerable groups (Global Fund to Fight AIDS, Tuberculosis and Malaria [Global Fund] 2018). Around half of all HIV infected people received a late diagnosis of the immune impairing virus in Europe in 2017 because of being tested too late (European Centre for Disease Prevention and Control & WHO Regional Office for Europe 2017). In the European region, Ukraine faces the second highest HIV epidemic with around 238,000 registered cases equalling a prevalence rate of 0.9 percent compared to estimated 1.0 percent in Russia¹. The country in the East has one of the fastest growing outbreaks worldwide (Public Health Centre of the Ministry of Health of Ukraine [PHC] 2017; UNICEF Ukraine ca. 2014). In Ukraine, adolescent girls and young women are confronted with issues of inequality both in health outcomes but also in everyday life (Dellar, Dlamini & Karim 2015; United Nations Ukraine ca. 2015). In the former Soviet Union state, the main route of the virus' transmission changed from drug injections to sexual transmission in 2008 and infections among young women are on the rise (Bozicevic et al. 2013). HIV in Ukraine is mainly prevalent in the central and south-eastern regions. Among the top five areas, registering high HIV rates is the city of Kiev with 432.6 cases per 100,000 persons (PHC 2017). On the grounds of the severity of the situation in Ukraine, HIV prevention programmes and projects have been established and supported by multilateral to civil-society organisations nationwide since the middle of the 1990s². Although it seems there is progress towards ending the epidemic, new and different transmission pathways as well as late testing seem to enable the persistence of HIV in the Ukrainian society. Therefore, this research aims to answer the following research question:

How can prevention projects influence the prevalence of HIV/AIDS among adolescent girls and young women in Ukraine?

This research aimed to investigate discrepancies between the prevalence of HIV and knowledge, preventive behaviour, tolerance towards people living with HIV (PLHIV) as well as

¹ The prevalence rate ranges from 0.8 to 1.0 percent. The Russian Federation does not deliver data to the Joint United Nations Programme on HIV/AIDS (UNAIDS), which is why, numbers may be unreliable (Ministry of Healthcare of the Russian Federation, 2016; Avert 2017a).

² Based on the beginning of the work of UNAIDS and the initialisation of the national HIV/AIDS response in Ukraine (Joint United Nations Programme on HIV/AIDS (UNAIDS) 2018c; Medwiser ca. 2011).

the accessibility of healthcare services among adolescent girls and young women. The research focused on how the prevalence and incidence of HIV has changed over time in Ukraine. Further, knowledge of HIV, condom use and testing behaviour along with tolerance towards PLHIV were analysed. The study also investigated the accessibility of healthcare services for testing, consultations and treatment of HIV using Kiev as an example due to its high HIV rates compared to other regions in Ukraine. This study applied a mixed methods approach where both secondary quantitative and primary qualitative data were collected and analysed approximately at the same time. The main reason for the chosen approach relates to the complexity given in the topic area. It required both to take a more general quantitative perspective as well as to conduct qualitative interviews with adolescent girls and young women to gain further information on the aspects mentioned above and potential underlying reasons.

1.2) About HIV

The HI-virus attacks the immune system and infects its cells, thereby destroying or impairing their function. It ends in an immune deficiency where the immune system is no longer able to fight diseases or infections (WHO 2017a). Opportunistic infections, such as toxoplasmosis or cancers, benefit from the weakened immune system. In the case of more than 20 opportunistic infections, related to HIV, the stage of acquired immune deficiency syndrome (AIDS) is reached. This can take up to ten years or longer (WHO 2017a). The virus' main transmission pathways include both vaginal or anal unprotected sexual intercourse as well as oral sex with an HIV infected person. Sharing contaminated syringes, needles, surgical equipment and other sharp instruments or receiving a transfusion of contaminated blood may transmit the virus as well. The transmission may also occur between mother and infant during pregnancy, childbirth and breastfeeding (WHO 2017a). Today, HIV can be treated but not cured (most common is the antiretroviral therapy (ART)). Through ART the virus can be suppressed meaning that the person living with HIV can no longer infect others and can live a normal life (WHO 2018b). Being infected with the HI-virus increases a person's vulnerability to a number of diseases (co-infections), such as tuberculosis (TB) hepatitis B and C virus, which are strongly associated with the HI-virus (Naing et al. 2013).

1.3) Global & European HIV Situation & Preventive Strategies

The worldwide situation of HIV prevalence is diverse. Globally, the number of HIV infections is decreasing. This stands in contrast to the European Region where between 2006 and 2015, the number of new diagnoses increased by 59 percent (ECDC & WHO Regional Office for Europe 2016:xii). Figure 1 shows the world's regions with their respective HIV prevalence rates among the adult population aged 15 to 49 in 2016. For better understanding, eight countries were specifically highlighted.

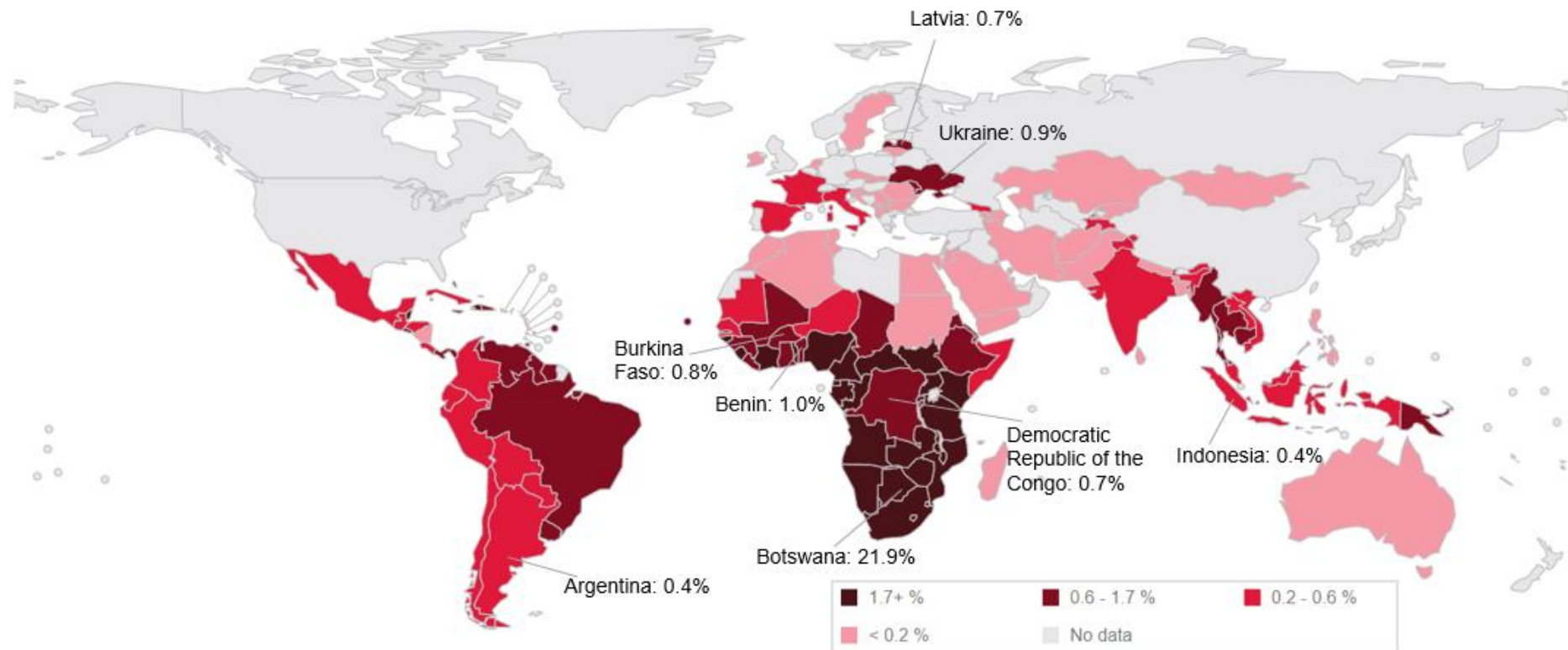


Figure 1: Global HIV prevalence with details for selected countries in 2016.

Based on: UNAIDS 2017b.

This map is solely for illustrating HIV prevalence and does not imply the recognition of any borders or territories.

The HIV prevalence differs significantly between the world's regions and is highest among countries in sub-Saharan region. Differences between the countries, such as the Democratic Republic of the Congo with 0.7 percent prevalence compared to Botswana with 21.9 percent should be noted underlining the diversity on the African continent. On the European continent, the Eastern states, such as Ukraine with 0.9 percent, note the highest HIV prevalence in the region comparable to some African countries, such as Benin (1.0 percent) or Burkina Faso (0.8 percent) (UNAIDS 2017b).

The world's community recognises the global threat of HIV and continues to fight for a zero incidence rate by 2030 as stated in the Agenda 2030 under target 3.3 (United Nations Statistics Division 2017). In June 2016, the United Nations Political Declaration on Ending AIDS highlights the vulnerability of adolescent girls and young women and aims to reduce new HIV infections among the target group to less than 100,000 by the year 2020 (United Nations 2016). The Global Fund Strategy 2017-2022 targets the drastic reduction of HIV incidence rates and mortality by scaling up universal access to HIV prevention as well as treatment options (Global Fund 2016a). Universal access is also aimed for in the WHO global health sector strategy in HIV 2016-2021 and in the UNAIDS Strategy 2016-2021, which form the basis for the action plan for health sector response to HIV in the European Region (UNAIDS 2015; WHO 2016a; WHO Regional Office for Europe 2016). The European action plan emphasises the importance of accurate and timely data and a people-centred response. Further, the United Nations Joint Programme to Fight HIV/AIDS (UNAIDS) presented the 90-90-90 targets focusing on the prevention of the spreading of HIV by treating and virally suppressing PLHIV³. These UNAIDS goals are also mirrored in the European Centre for Disease Control and Prevention's (ECDC) continuum of HIV framework monitoring the effectiveness of the region's HIV response. It states an additional objective, which is to monitor carefully the estimated number of PLHIV (ECDC 2017). To support countries in monitoring and reaching the targets, the UNAIDS provides an annual update on the Global AIDS Response Monitoring Act (UNAIDS 2017d).

To understand how global and regional efforts to combat HIV/AIDS are transferred into the Ukrainian context, the following sections focus on the health system and -situation in Ukraine as well as on ongoing preventive strategies.

1.4) Health System, -Situation & Preventive Strategies in Ukraine

The subsequent paragraphs introduce the Ukrainian health system and overall health status as well as how they influence the concentrated epidemic in the country. Further, the HIV situation

³ The targets encompass that (a) 90 percent of PLHIV know their status, (b) know their status and are on treatment and (c) those 90 percent who are on treatment are virally suppressed (UNAIDS 2017c:8).

is presented followed by access to healthcare services and introducing national prevention strategies.

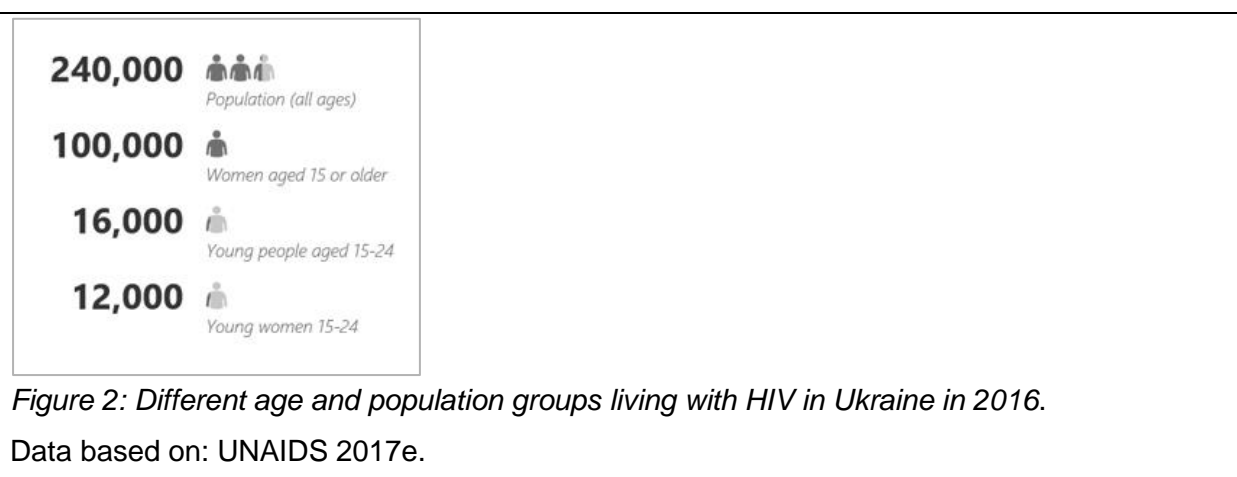
1.4.1) The Ukrainian Health System

The healthcare system in the Soviet Union was highly centralised, hierarchical and under state control (Semashko health system) (Lekhan et al. 2015:xvi). Since then, some progress was made to decentralise the sector but privatisation consists still of a small part in this area with mainly privately practicing physicians, diagnostic facilities and pharmacies. The population's needs are not satisfied by the current health service provision (Lekhan et al. 2015:xvi). Officially, healthcare especially for HIV is free and accessible for everyone (Health Strategic Advisory Group [Health SAG] ca. 2014:10). A report by WHO in 2016 states otherwise: Ukrainians spend more than 25 percent of their budget on health, making the healthcare system an example for the ongoing corruption in the country (WHO 2016b:20; Ukraine Crisis Media Center [UCMC] 2018). The patients spend money by paying bills, providing materials or "donations" to hospitals as well as paying for the officially free medicines (UCMC 2018). In addition, pharmaceutical prices have increased since 2008 by 40 to 70 percent (Lekhan et al. 2015:xix). The great share of health financing stems from the general government revenues obtained through taxation, which pays for public health and inpatient medical services. Ukraine spends around 7.6 percent of its gross domestic product on health, which is considered high in relation to other former Soviet Union states, which spend around 5.2 to 6.5 percent (Lekhan et al. 2015:40). The health system is currently under reform focussing on new financing pathways, the introduction of family doctors comparable with general practitioners and an insurance scheme as well as making it mandatory for doctors to adhere to the international rules, which provide modern treatment and medication (UCMC 2018).

1.4.2) Health & HIV in Ukraine

In 2015 to 2020, the country's life expectancy is still low, compared to European standards: Men on average reach 67.06 years (the European average is 74.7 years) and female life expectancy is 76.94 (the European average is 81.47 years) (United Nations, Department of Economic and Social Affairs, Population Division [UN DESA] 2017). Besides cardiovascular diseases, other key factors for mortality are infectious diseases including HIV/AIDS and TB. Additionally, the conflict in eastern Ukraine causes the deterioration of basic healthcare services and up to 1.8 million internally displaced persons (IDPs) with increased vulnerability to diseases and especially the spread of HIV (Lekhan et al. 2015:xv; UNHCR 2018; University of Oxford 2018). Women and children are approximately two-thirds of these IDPs. The subsequent section looks at the HIV situation in Ukraine.

Figure 2 shows the estimated number of people living with HIV in Ukraine by age group. The prevalence rate among adults aged 15 to 49 is estimated to be 0.9. Among the adult population (15 years and older), more men (around 140,000) than women (around 100,000) are living with HIV. Young women aged 15-24 make up three-quarters of all young people infected. This results in a prevalence of 0.6 among young women in contrast to 0.2 among young men (UNAIDS ca. 2016b).



The numbers displayed in figure 2 are solely the registered cases. It is estimated that around 50 percent of PLHIV in Ukraine are aware of their HIV status and around 37 percent receive ART (UNAIDS 2018a; University of Oxford 2018). This means that more than 60 percent of diagnosed PLHIV do not receive treatment. When receiving a positive diagnosis for HIV, around 40 percent are in their later stages of the infection (University of Oxford 2018).

The HIV incidence per 1,000 population among adults aged 15 to 49 was 0.75 in 2016 in contrast to 0.72 in 2014 (UNAIDS ca. 2016b). One reason for the ongoing transmission may be the lack of sexual education classes in Ukrainian schools. Sexual health is included in so-called health lifestyle or health fundamentals lessons. However, the quality of the lesson depends on the school and teacher. A report by the Guttmacher Institute states that around 59 percent of all primary and secondary schools include skills-based HIV education. HIV education is included in the national curriculum. Yet, the report could not verify the actual implementation of the content (Anderson et al. 2014:48; Woog & Kågesten 2017:11). The German Development Cooperation (GIZ) HIV prevention project supports the Ukrainian Ministry of Education in improving the quality of sexual education in schools by further educating teachers (GIZ 2018). By the end of the project in July 2018, a centre for sexual education shall be established and fully running providing independent high quality education on sexual health and HIV⁴. The

⁴ Additional knowledge has been obtained during informal interviews with the project staff during an internship between August 2017 and February 2018. The project is used as an example for ongoing prevention in Ukraine throughout the thesis.

subsequent paragraph provides an overview of the ongoing prevention programmes for HIV in Ukraine.

Ukraine has several agreements, laws and policies aiming to end the HIV epidemic and to create a supportive environment for PLHIV. In 2010, the state adopted the Law on HIV/AIDS ending restrictions related to the virus and disease and supporting PLHIV by ensuring anonymity (WHO 2010). Further, in the *National Programme of Ukraine for the Prevention of HIV/AIDS 2014-2018* the country focuses on people who need access to prevention and treatment, especially key affected population, such as people who inject drugs, sex workers and their partners (Dutta et al. 2013). In March 2017, Ukraine also signed the UNAIDS Fast-Track Targets as well as its HIV sustainability strategy (UNAIDS 2018a). Finally, the bilateral Association Agreement between the European Union and Ukraine adopted in July 2017 has a special chapter dedicated to public health (Chapter 22) where cooperation on HIV prevention measures is mentioned (Article 427, 1b) (European Union 2014:159-160)⁵. By implementing these legislations and policies, Ukraine creates an enabling environment for the prevention of HIV/AIDS as well as supporting actions against the stigmatisation of infected people. To continue the work in this area, it is crucial that access to healthcare is available for all. Thus, the following figures (3 and 4) present an overview of official testing and treatment facilities for HIV in Ukraine and Kiev.

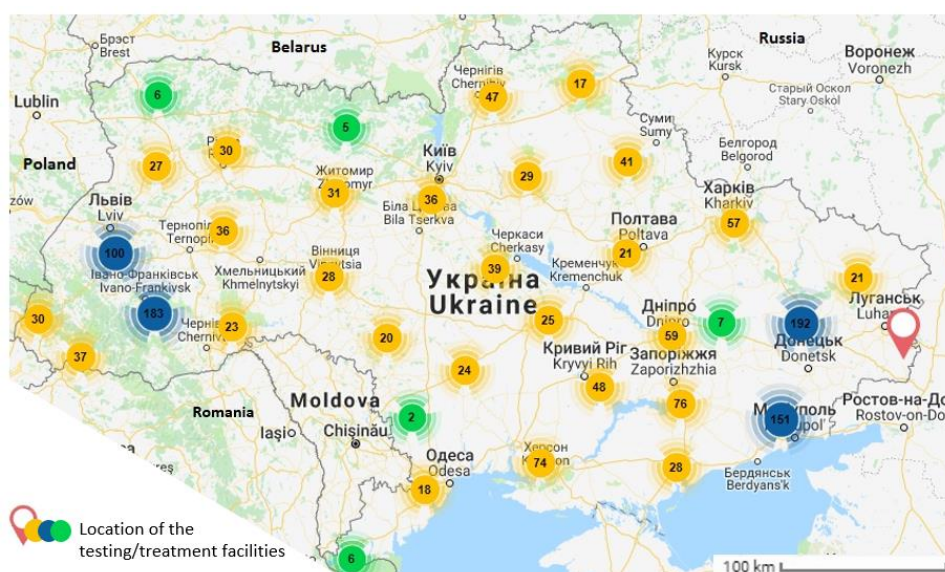


Figure 3: HIV testing and treatment facilities in Ukraine.

Based on: GIZ 2016.

⁵ This is a selection of main documents guiding HIV prevention and protection of PLHIV in Ukraine. For a full overview of national laws, decrees and resolutions influential for this subject matter please consult the website of the national public health centre (http://phc.org.ua/en/pages/diseases/hiv_aids/guiding-documents).

The numbers provide an overview of the amount of testing and treatment facilities in the various regions in Ukraine. Green indicates a low number (≤ 10 facilities), yellow a medium (≥ 11 to ≤ 99 facilities) and blue a high availability of testing and treatment facilities (≥ 100 facilities). In some regions, such as in western or south-eastern Ukraine, the HIV healthcare services are of a high prevalence. Compared to the capital region or southern Ukraine, such as the Odessa region, the number of HIV services is lower. This shows a discrepancy in both availability of and access to HIV testing and treatment facilities in relation to the prevalence in the different regions of Ukraine. Looking at one of the main cities in the South, Odessa, which registers the highest HIV rates in the country, it may be interesting to find out whether 18 HIV healthcare services may be sufficient to fully cover the population's needs (PHC 2017).

The following map zooms into Ukraine's capital Kiev, which has one of the top five HIV rates in the country (figure 4). Thus, there may be a greater need for HIV healthcare services in this area.

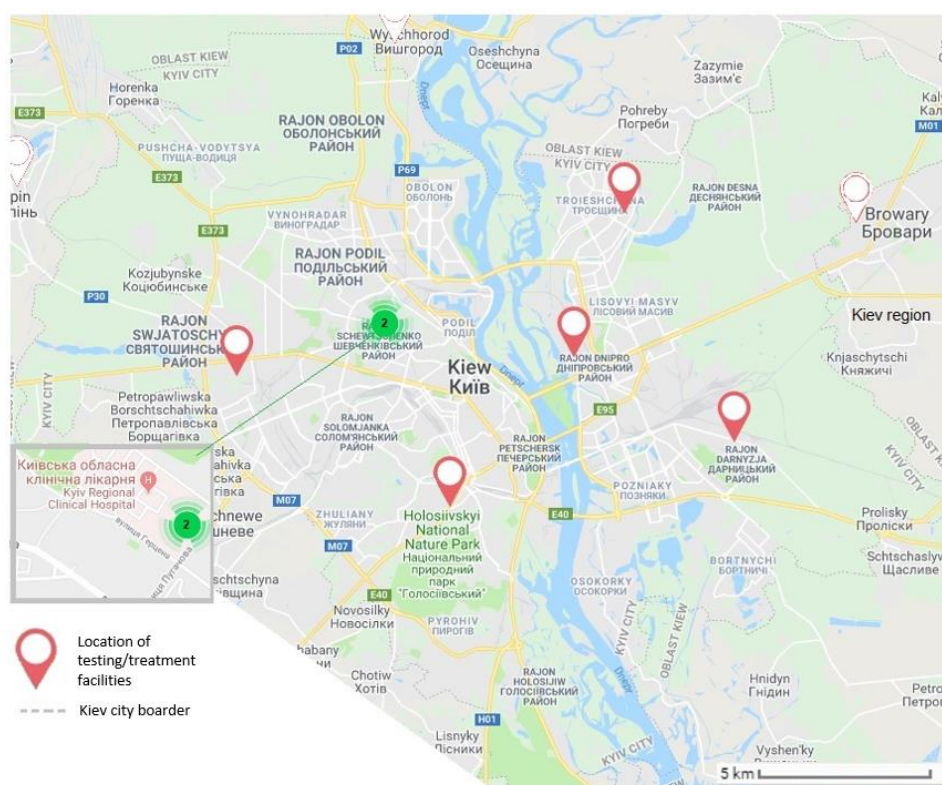


Figure 4: Location of testing and treatment facilities in Kiev.

Based on: GIZ 2016.

The different testing and treatment facilities for HIV in Kiev are situated mainly in the city centre. It seems that in some parts of the city, the number of facilities could be increased. Nevertheless, a general good coverage and accessibility in the city centre can be noted.

Keeping in mind the availability of healthcare services for HIV, the question of what is being done to prevent the spread of HIV, to ensure accessibility of healthcare services for all and to reduce stigmatisation for PLHIV remains. Around 15 active HIV prevention projects and organisations in Ukraine can be found in appendix 1, which provides an overview of their wide range of approaches. The high number of activities for lowering and ending the prevalence of the HI-virus makes it difficult to understand why the HIV prevalence is still on the rise. One possible explanation could be the increased knowledge of people to be tested for HIV along with the doctors who have been trained to better recognise symptoms of HIV, which increases the number of tests and consequently results in higher rates of diagnoses. These assumptions are discussed in relation with the results and findings of the quantitative and qualitative data in chapter 6 and 7. The following paragraphs provide some background on Ukraine relevant for the research question.

1.5) Ukraine at a Glance

In 1991, Ukraine gained independence from the Soviet Union, which was followed by a fast marketisation and hyperinflation resulting in severe socioeconomic complications. The country, recently hit by an ongoing armed conflict in the East, is categorised by the World Bank as a lower middle-income country and is in recession since 2012 (Lekhan et al. 2015:xv-xvi; UNAIDS 2018b; World Bank Group 2018).

1.5.1) Gender Equality in Ukraine

Human rights and gender equality are vital in preventing HIV. People who experience any form of discrimination or inequality along with insufficient respect or protection of their human rights have less capacity in protecting themselves from an infection with the HI-virus. Additionally, they have less access to testing, treatment and supporting healthcare facilities (United Nations Development Programme [UNDP] 2015). Females account for 53.8 percent of the Ukrainian population (United Nations Ukraine ca. 2015). The country has committed to gender equality by agreeing to key international engagements⁶. The gender inequality index, which “shows the loss in potential human development due to disparity between female and male achievements” (UNDP n.d.) in the dimensions empowerment and labour market participation as well as especially reflecting women’s health status was 0.284 (range: 0=equality to 1=inequality) for Ukraine in 2015 (UNDP 2016:214). In 2016, national legislations and policy frameworks, namely the Equal Rights and Opportunities for Women and Men state programme, along with the National Action Plan called *Women, Peace and Security* from the same year were implemented.

⁶ The main international agreements consist of the Convention on the Elimination of All Forms of Discrimination against Women (1980) and the Optional Protocol, Beijing Declaration and Platform for Action (1995) (United Nations Ukraine ca. 2015).

Yet, women disproportionately face domestic and sexual violence with nearly 90,000 registered cases per year limiting them to fulfil their full potential (United Nations Ukraine ca. 2015). Further, women are unequally represented in the parliament (12 percent females) as well as in the ministerial cabinet (10.5 percent females). Women often work in low-paid economic sectors although they have full access to education and employment (Bertelsmann Stiftung, BTI 2016:17; United Nations Ukraine ca. 2015). This results in women's voices being less represented in the political decision-making process. Albeit the importance that women's needs should especially be considered when planning and implementing HIV prevention projects.

The following chapter outlines the theoretical background of HIV prevention programmes and develops a framework for assessing outcomes of HIV prevention projects and programmes.

2) Theoretical Groundings & Key Concepts of HIV Prevention Projects

Theories focussing on how to best influence HIV prevalence range from behaviour change on both individual and societal level, increasing knowledge or the more dominant term health literacy to the concept of equity to healthcare accessibility.

The following sections start with the outcome model by Don Nutbeam (2000), which is adapted to this research at the end of this chapter. It serves as a guiding framework throughout the thesis to contribute to the explanation of the results and findings of the hereinafter-following data analysis. The other sub-chapters present main theories and concepts related to public health promotion and interventions, health literacy, equity and accessibility to healthcare as well as the concept of gender inequality.

2.1) Outcomes of Health Promotion Projects & Programmes

The next paragraph presents a model by Don Nutbeam (2000) (figure 5). It provides a tool to overall assessment of the effectiveness of health interventions also in general society based on an analysis of a project's different components.

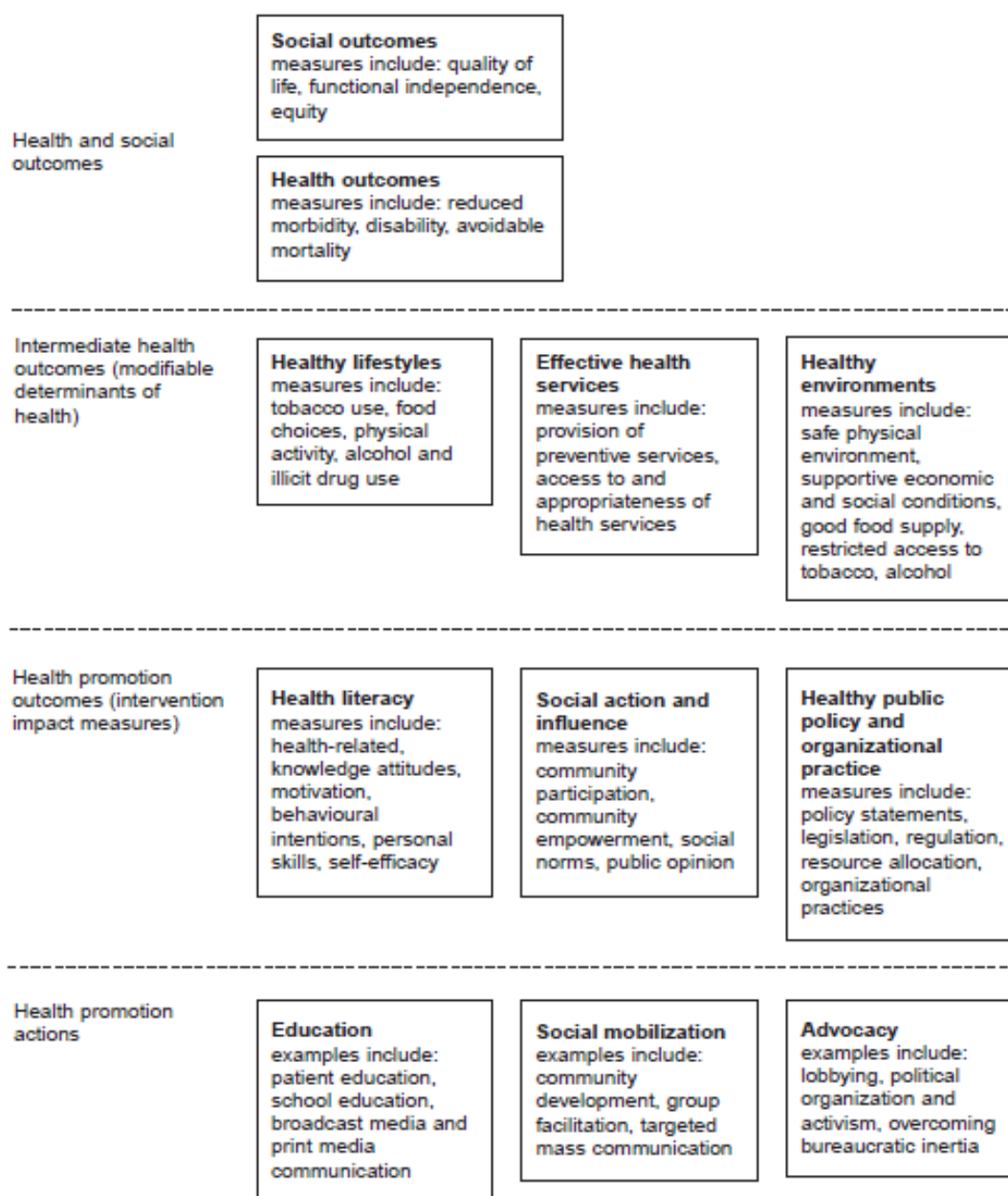


Figure 5: Outcome model for health promotion.

Source: Nutbeam 2000:262.

The model shows that different health promotion activities, such as education, social mobilisation and advocacy, may lead to health promotion outcomes in form of improved health literacy, social action and influence as well as healthy public policy and organisational practice. These components then result in intermediate health outcomes, which include healthy lifestyles, effective health services and healthy environments. The top level illustrates the contribution of health promotion actions to overall societal changes in health, which are separated into social and health outcomes. The latter can be assessed through reduction in morbidity and social outcomes may be measured by looking at quality of life. The Outcome Model for Health

Promotion further includes potential measures for the various outcomes, such as knowledge (measure) for health literacy (outcome) or access to and appropriateness of health services (measure) for effective health services (outcome) (Nutbeam 2000). The model draws on specific theories and concepts. Some theories were chosen due to their relevance in relation to HIV prevention projects and are further outlined below to better explain the idea behind the different aspects of the model.

2.2) Theories of Behaviour Change in Relation to HIV Prevention

In order to make individual and societal behaviour more favourable, HIV prevention projects are based on theories of behaviour change to positively influence the HIV prevalence. These relate to the health promotion activities of the outcome model, mainly focussing on education and social mobilisation.

A number of these theories focus on individual behaviour change, such as the Health Belief Model by Becker (1974), which is based on the assumption that people make rational decisions. The Theory of Reasoned Action by Fishbein's and Ajzen's (1975) is a similar theory, which assesses behavioural intentions, beliefs, attitudes and related actions of individuals.

The Social Learning or Cognitive Theory by Bandura (1986) focuses on modelling positive behaviour as well as on self-efficacy, which is the individual's comprehension to be actually able to adapt the behaviour. Within HIV prevention, the Diffusion of Innovation Theory by Rogers (1983) is often used to raise awareness as well as to include opinion leaders who are able to influence people's behaviours and attitudes. This can be of advantage as messages are mostly free from technical aspects and culturally better acceptable (Freimuth 1992; Rogers 1983; 1995).

Critiques for these theories concerning HIV prevention include that people do not see the need for protection, as they perceive themselves as secure from the virus (Freimuth 1992:101). Further, according to Michal-Johnson and Bowen (1992:153), behaviours related to the autoimmune disease are greatly affected by emotions and even though some individuals may feel pressured to act upon the provided information other factors, such as societal power, may constrain their decision (Yoder 1997). The universal concern regarding theories focusing on individual behaviour change is that in societies where group norms have a more significant influence on individual's decisions, the effect may not be as noteworthy compared to more individualistic cultures (Yoder, Hornik & Chirwa 1996). Contrary to this critique argues Bandura (1998:65-67): there is also the domain of collective efficacy. This entails that individuals share a belief, gain more power and thus can strive for change collectively.

In combination with the social marketing theory to promote positive health behavioural practices, such as condom use to avoid the spread of HIV in a society, individual actions may be positively influenced. The four main components of social marketing theory are 'product', 'price', 'place' and 'promotion' (the four P's) and 'positioning'. It also mainly focuses on influencing individual behaviour (Airhihenbuwa & Oregon 2000).

The described theories present how HIV prevention programmes attempt to positively change behaviour. However, these theories lack the acknowledgement of context and culture, which are of central relevance for a sustainable and positive change (Edgar, Fitzpatrick & Freimuth 1992; Lupton 1994; Airhihenbuwa 1995). Culture can have a great influence on people's understanding and perception of a certain health phenomenon as well as on their decision-making especially towards positive behaviour change (Schoepf 1991; Airhihenbuwa et al. 1992; Michal-Johnson & Bowen 1992; Seidel 1993; Crawford 1994). Thus, a culturally relevant HIV/AIDS prevention programme can have a positive influence on health and social outcomes (Janz et al. 1996). This is why, Airhihenbuwa and Oregon (2000:7,13) argue that for all HIV/AIDS prevention activities, culture instead of individual behaviour should be in focus. Finally, the often-noted false sense of security from the society driven by the hope of an effective vaccine to cure the disease and a perceived distance are additional aspects highlighting the need to design context specific HIV prevention projects.

2.3) Health Literacy

Health literacy is also shown in the Outcome Model, which is why the concept is further explained in this section. Many health interventions projects aim at increasing knowledge about the health issue through school education or mass media campaigns in order to influence the prevalence of HIV. According to the WHO Commission on Social Determinants of Health (2007), general literacy is crucial in determining health inequities, which applies to both poor and rich countries. There are two types of health literacy: Individual and public health literacy. Scientific evidence shows that low health literacy and unsatisfying health outcomes are interrelated (Parker 2000). However, existing studies have often used different cut-off points in their literacy measurement and analysis. This should be reflected when aiming to measure health literacy rates of a certain population (Wolf et al. 2010).

Besides the overall influence of prevention projects on HIV prevalence, the research aimed to find out the accessibility of prevention and treatment services for adolescent girls and young women. The main concept, which falls into this category, is discussed in the following paragraphs.

2.4) Equity & Access to Healthcare

One definition of the concept of “access” is that it is a summary of a collection of five elements describing the link between the healthcare sector and the patient. These elements are acceptability, affordability, accommodation, accessibility and availability (Pechansky & Thomas 1981). The definition of Universal Health Coverage and Universal Access by the WHO outlines three of the five dimensions – physical accessibility, financial affordability and acceptability (=quality) (Evans, Hsu & Boerma 2013). The concept served as a basis for questions about healthcare services in the qualitative interviews (chapter 5.2).

There is a general concern of inequality in access to healthcare. Equity in healthcare refers to the five elements presented above: equality of utilisation, equality of access, distribution according to need and equality of health (Culyer & Wagstaff 1993). However, one must understand that equality of access to healthcare does not encompass health equality. If this would be a result of a reform, it would according to Culyer and Wagstaff (1993) be a random occurrence. The WHO Commission on Social Determinants of Health states that “health equity depends vitally on the empowerment of individuals to challenge and change the unfair and steeply graded distribution of social resources to which everyone has equal claims and rights” (2008). In relation to HIV, gender inequality and context play a vital role in access to healthcare for HIV. In addition, stigma may be a factor why access to health may be unequal. These factors will be further investigated in the later data analysis and discussion aiming to transfer the theories and concepts to the Ukrainian context.

2.5) Gender Equality

With equity in healthcare, the concept also entails that adolescent girls and young women have equal access along with the other aspects explained above. The Outcome Model does neglect factors such as gender, context and culture, which may influence the outcomes of HIV prevention projects.

The research focuses on AGYW and is based on the concept of *Gender Equality*. There is evidence that due to the inequality of men and women, which includes inequalities in entitlements, norms and values, resources and power, lower the health outcomes of a significant number of girls and women. Gender inequality is, therefore, also a driver of health inequities (WHO Commission on Social Determinants of Health 2008).

Low access to education and healthcare together with gender-biased violence and an overall system that does not focus on young people’s needs pose multiple barriers for adolescent girls and young women to have the ability to protect themselves against HIV, especially when entering adulthood (UNAIDS 2014b). Among the age group of 15-24 year olds, majority of HIV infections worldwide occurs with AGYW. The high case number in this group especially

documented in east and southern Africa, has its origins in human rights, gender inequality-related, economic, social and cultural barriers. Females are much stronger affected by constraints in these areas. Along with biological differences, they face a higher risk to contract HIV (Global Fund 2016b:3; UNICEF Ukraine ca. 2014). This is why it is crucial that all levels promote gender equitable behaviour so that further infections are prevented. Women and men should equally make decisions and share responsibility including also parenting. To accept a woman's refusal to sexual intercourse and arguing without being violent are also factors to positively influence HIV prevalence (Promundo, UNFPA & MenEngage 2010:109).

2.6) A Theoretical Framework for Assessing the Influence of HIV Prevention Projects

The above-explained theories combined with the outcome model by Nutbeam result in the following analytical model, which has been related to outcomes of HIV prevention projects (figure 6). The model shows the different outcomes through HIV prevention projects and how they can be measured. The levels are the same as in the original outcome model and do overlap to show that the different stages influence each other and have to some extent fluent transitions. Social action and influence, healthy lifestyles as well as healthy environments were the three excluded outcomes, as they do not provide indicators based on the literature research which measure the influence of typical HIV prevention projects. The top level of the model depicting the social and health outcomes mirrors this study's research question and therefore the overall goal of this research: *How prevention projects influence HIV prevalence*. An important change is the inclusion of culture and context as pointed out by Airhihenbuwa and Oregon (2000) since HIV prevention does not occur in isolation from the context and culture. The context also implies the position of adolescent girls and young women in the Ukrainian society as described in chapter 1.5.1. Two questions remain: First, whether HIV prevention projects, which aim for these outcomes and apply these theories, can affect the overall prevalence of the virus in the Ukrainian context, and second, to what extent knowledge, behaviour, attitudes and access to healthcare services can be positively influenced?

The following chapters of this research utilise this framework as a guidance as well as compare the results and findings of the quantitative and qualitative datasets to the expected outcomes of the model.

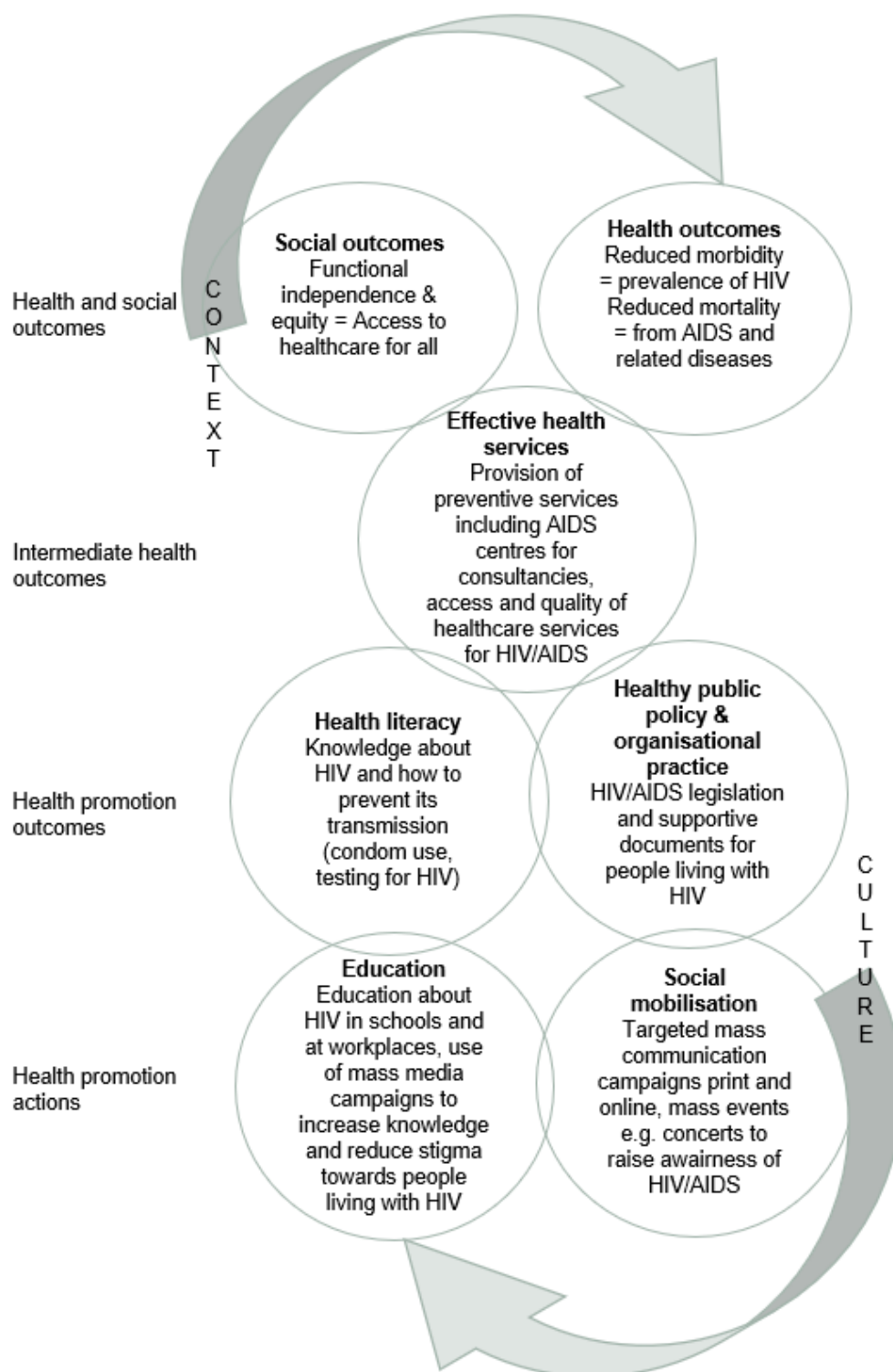


Figure 6: Theoretical framework for assessing the outcomes of HIV prevention projects (adapted outcome model).

Based on D. Nutbeam, 2000.

3) Review of Existing Research on HIV Prevention Projects

HIV/AIDS exists since the 1980s, which results in the global community actively fighting the virus's transmission and in lowering its prevalence for several decades (U.S. Department of Health & Human Services n.d.). Based on the above presented model for measuring the outcomes of HIV prevention projects, the empirical perspectives – with additional paragraphs on historical background and causes – were structured accordingly. There is an abundance of studies providing insights on how to prevent HIV and thereby lower its prevalence. The results presented in this review focus on peer-reviewed literature in order to obtain a good overview of previously done research in this topic area and to retrieve most recent (past five years) high quality research. Applied filters for the online literature search were: Year: from 2013, review articles and/or meta-analysis. Specific attention was paid to studies concerning the focus group (“young women and adolescent girls 15-24 years of age”), focus area (“Ukraine, Eastern Europe, Central Asia”) and effectiveness of HIV/AIDS prevention projects.

3.1) Findings

Findings of the research are categorised beginning with health promotion actions and outcomes, intermediate outcomes and the aspect of gender when it comes to the effectiveness of HIV prevention projects. The majority of studies found during the research frequently have a contextual focus on the global South. Additionally, the main populations the research concentrates on are people who inject drugs or men who have sex with men (Beyrer et al. 2010; Degenhardt et al. 2014; Owczarak, Filippova & Phillips 2014; Nikolopoulos, Kostaki & Paraskevis 2016). One crucial reason for this result is that elevated HIV/AIDS rates can be found especially in these key populations who often face high transmission rates (Malinowska-Sempruch, Bonnell & Hoover 2006; Bozicevic et al. 2013). However, sexual transmission particularly in Europe or Central Asia accounts for one of the most frequent paths for contracting HIV (Bozicevic et al. 2013). This section will begin with taking a global and historical perspective on HIV/AIDS prevention. Afterwards a description of the literature research including design and findings are presented.

3.1.1) HIV/AIDS from a Global, Historical & Ukrainian Perspective

The topic of combating HIV/AIDS has been on the public health agenda for several decades. However, globally AIDS is still the second leading cause of death for young people (WHO 2014:5). In the mid-1980s, HIV/AIDS has first been recognised officially and incidence rates have been rising since (Mann 1989). Global support and funding along with regional and local prevention initiatives since 1984 made it possible to boost empirical research to explore

causes, pathways of transmission, successes in prevention and treatment, which decreased the estimated 3.2 million cases of infection in 1996 to 1.8 million in 2016 (Avert 2017b; UNAIDS 2017f). Nevertheless, the actual numbers of PLHIV are on a constant rise. In 1990, there were around 8.9 million PLHIV whereas in 2016, 36.7 million people lived with the virus (UNAIDS 2017g). Especially among key populations, which are people who inject drugs, sex workers, men who have sex with men, young people, women, the LGBTQ+⁷ community and prisoners HIV prevalence rates are growing. One main factor is the increased provision of healthcare services resulting in higher testing rates and consequently in diagnoses. However, the key populations face discrimination and lack specific protection measures in various contexts, which make them more vulnerable to the virus compared to the general population (Stover et al. 2014; UNDP 2015). Results from a South African study show that higher HIV incidence rates among women (4.8 percent) compared to their male counterparts (2.3 percent) are associated with women being more frequently diagnosed and treated than men. Further, women in comparison to men also apply more preventive measures to lower the risk of spreading the virus (Vandormael et al. 2018). Women are also more vulnerable to contract the HI-virus especially during and post-pregnancy. Suggested reasons include elevated hormone levels, which may contribute to an increased receptivity (Thomson et al. 2018). Progress in HIV prevention and therefore lowering the virus' incidence and prevalence seems to become more difficult. Since 2008, a lower number of resources provided by the international community has been noted (Stover et al. 2014). Studies which present research on the effectiveness, efficiency and sustainability of HIV/AIDS prevention programmes are elaborated in the subsequent sections and are sorted following the categories of the theoretical framework (Degenhardt et al. 2014; Fonner et al. 2014; LaCroix et al. 2014; Dellar, Dlamini & Karim 2015).

3.1.2) Health Promotion Actions & Outcomes

The following literature provides information on the effectiveness of educational and social mobilisation actions of HIV prevention projects as well as how they achieve health literacy. Comprehensive sex education programmes in schools in combination with community involvement are the most effective measures to positively change and influence HIV-related behaviour according to Fonner et al. (2014). Some researchers have analysed the effectiveness of using mass media instruments to prevent HIV (LaCroix et al. 2014). However, although mass media has typically a nationwide reach and is considered as an effective intervention instrument, the authors could not significantly prove that these kinds of interventions also reduce HIV/AIDS disparities on a global level. Stigma is one crucial barrier

⁷ LGBTQ+ are lesbian, gay, bisexual, transsexual, queer and other people.

to overcome when it comes to sustainably combating the HIV epidemic. Therefore, several studies focus on stigma reduction towards PLHIV, e.g. by educating health personnel (Brinsdon, Abel & Desrosiers 2016; Chivate et al. 2017; Jaworsky et al. 2016). Additionally, Chivate et al. (2017) argue that the gender gap narrows among HIV positive people. Women become more vulnerable due to an equal society and economy. The authors conclude that there is a great need to focus more on HIV positive women in health settings. There are a number of policies recognising that women living with the virus are especially vulnerable as they suffer from social shortcomings due to their gender. The effects of 19 worldwide interventions, which included one in Ukraine, on the prevalence of and positive behaviour towards HIV among heterosexual men have been analysed by Townsend, Mathews and Zembe (2013). The interventions with the most significant effect were the ones focusing on increasing condom use. Less effective, according to the authors are interventions, which seek to reduce the number of sexual partners. There seems to be no intervention proposing a best practice example to change the risky behaviours among heterosexual men.

3.1.3) Intermediate Health Outcomes

When focussing on specific target groups, such as on men who have sex with men, some prevention projects and programmes aim to reduce the spread of HIV through increasing access to treatment opportunities. Thereby the effectiveness of health services can be increased, which is an intermediate health outcome of health prevention activities (see: Adapted Outcome Model). The study by Degenhardt et al. (2014) addresses this point. The authors' analysis of approaches to HIV prevention of different countries showed the importance of having access to treatment services (Degenhardt et al. 2014). Today, effective treatment options exist for PLHIV in order to ensure a good quality of life. The therapy which is most referred to in the literature is ART and does both act as treatment and prevention of HIV/AIDS. This treatment as prevention approach poses an opportunity but needs to be supported by politicians. Further, it requires resources and innovative interventions in order to end the epidemic (Nachega et al. 2014; Stover et al. 2014). The important factor for this approach to be successful is that there is universal access for treatment. People who use drugs do face constraints when it comes to accessing ART (Malta, Ralil da Costa & Bastos 2013) This highlights the elevated vulnerability of this group compared to people who do not use drugs. The authors state that factors, such as being a female drug user along with stigma coming from health professionals elevate their vulnerability. This shows that access to ART is influenced both by social and structural aspects (Malta, Ralil da Costa and Bastos 2013). The argument is also supported by Stover et al. (2014) who discuss the intensification of treatment as prevention strategy conforming to the 2013 WHO guidelines on the use of antiretroviral drugs (WHO 2013). The success of this approach also depends on the expansion of testing

facilities and the willingness of people to both be tested as well as to accept treatment as soon as possible (Stover et al. 2014). Additionally, there are various projects and programmes to make testing and treatment more attractive. One example poses the couples' testing along with non-monetary incentives as seen in the study by Sibanda et al. (2017).

3.1.4) Gender Aspect

In the case study by Dellar, Dlamini & Karim (2015) who investigated the disparity of age and sex in southern Africa, the great need to focus on adolescent girls and young women when planning and implementing HIV/AIDS prevention programmes becomes evident. According to Salam et al. (2016) AGYW have unique needs when it comes to their sexual and reproductive health regardless of being sexually active or not. One example pose female sex workers who belong to one of the most vulnerable groups for HIV acquisition and who are repeatedly confronted with gender-based violence (Decker et al. 2013). The result of the study by Decker et al. (2013) shows that if violence against female sex workers is reduced, new HIV infections can be avoided. Other effective interventions include sexual education combined with contraceptive provision and sexual health services tailored to adolescents' needs (Coyle et al. 2013; Elliott et al. 2013; Salam et al. 2016).

3.2) Conclusion of the Literature Review

This literature review showed that there is a general focus on the global South for investigating the effectiveness of HIV prevention projects and a small number of studies focusing on Eastern Europe, Central Asia or Ukraine in particular concerning the influence of HIV/AIDS prevention projects. Additionally, the focus group as stated in the research question in combination with the region of choice has not been investigated in detail in relation to HIV. In general, effective prevention programmes focus on condom use or have a combination of sexual education and healthcare services tailored to adolescents' needs. The question remains how HIV prevention projects influence the virus' prevalence in Ukraine. The factors of behaviour change and tolerance, how accessible testing, consulting and treatment facilities actually are and what patients face in terms of quality of healthcare for HIV in the Ukrainian context with a particularly focus on adolescent girls and young women should be considered. The research concentrated on factors of knowledge of HIV, positive behaviour change among adolescent girls and young women, such as condom use and being tested, their tolerance towards PLHIV as well as on their access to HIV healthcare services.

4) Methodology for the Quantitative & Qualitative Data

Besides the literature review, the research focused on quantitative and qualitative data to answer the research question. This section describes the methodology on how and why data was collected as well as the philosophical foundations.

4.1) Mixed Methods: A Definition

A mixed methods approach provides the opportunity to collect and analyse not only one kind of data (Creswell 2014). It enables to get a better understanding of the topic area. The research is flexible and may reach a satisfactory answer for the research question since reasons for certain behaviour may not necessarily be quantifiable. Results of the quantitative data may be explained by the qualitative data (Creswell 2014). Quantitative results combined with qualitative data, which has a small sample size but provides rich information, answer the 'why' of how HIV prevention programmes influence the virus' prevalence. After the literature research, the question remained if there are other reasons for increasing prevalence rates except the overall financial shortcomings. How come that the levels in Ukraine remain comparably high even though there are numerous projects and programmes focussing on the prevention of the virus' incidence? The data presented in this research is mainly of quantitative nature and qualitative aspects enrich the results of the analysis.

4.2) Design

The following figure 7 shows the design of this research. Quantitative data was collected to deliver generalisable results. The qualitative interviews can enrich the results with insights from the target group.

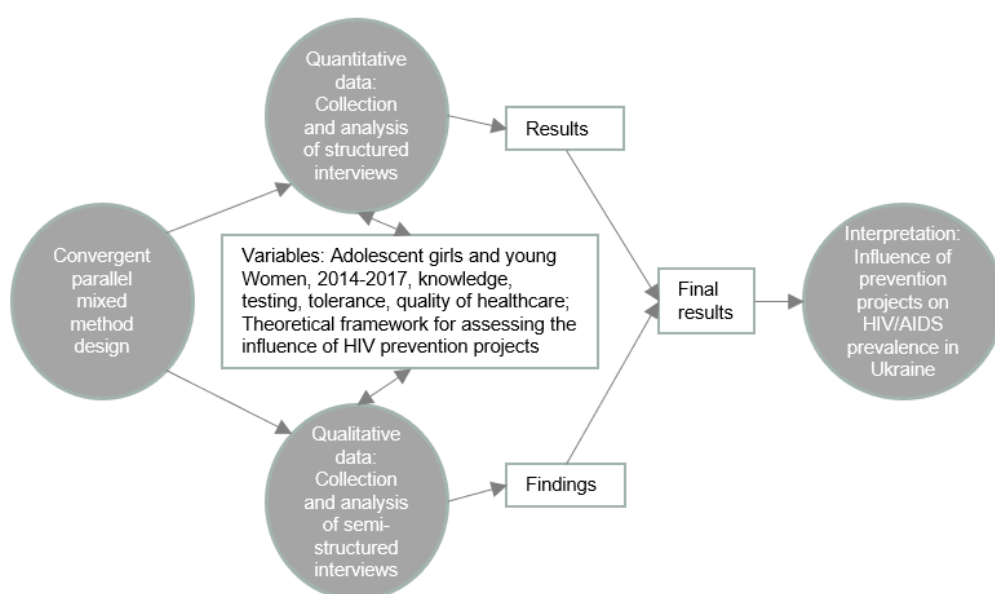


Figure 7: Design of the mixed method study.

Both quantitative and qualitative data were collected and analysed roughly simultaneously (convergent parallel mixed methods) (figure 7). The separately collected data focused on similar variables and concepts as determined by the research question during the data collection and analysis phase. The results and findings were then compared, merged and interpreted in relation to the literature research and theoretical framework with the aim to deliver rich answers for the research question.

4.3) Philosophical Foundations for Using Mixed Methods Research

The philosophical perspective behind the mixed method approach is that reality exists both dependent and independent from the mind, which leads to different worldviews and assumptions. Therefore, successful research requires different data collection methods. The research presented here relates to the Ukrainian setting and is influenced by the historical, political and social context (Creswell 2014).

5) Description of Data

This chapter introduces the characteristics of both quantitative and qualitative data. In addition, it explains why it was limited to stay focussed on answering the research question.

5.1) Quantitative Data

The secondary quantitative data was mainly used to answer the research question on the prevalence of HIV in Ukraine as well as focused on change in individual behaviour, attitudes and knowledge among the target group in comparison to female adults and overall youth over time. The indicators were largely based on the Global AIDS Monitoring documents by UNAIDS (UNAIDS 2016a & 2017d). The change of prevalence over time was measured by looking at registered cases of PLHIV. The sources were the databank of UNAIDS and the research company GfK⁸, which conducts the annual research for the HIV/AIDS prevention project implemented by the GIZ GmbH since 2014 (GIZ 2018)⁹. The PHC registers cases of HIV among the Ukrainian population. If a person is positively tested on HIV, the result is forwarded to the respective AIDS Center in the region, which again forwards the case numbers to the PHC. The data is updated on a monthly basis.

⁸ An overview of the data collection process can be found in appendix 2.

⁹ The GIZ HIV prevention project is one of the longest active projects in Ukraine and based on a successful German example. It started with a mass media campaign in 2004 and continued with a holistic approach targeting all levels of society (GIZ 2018).

The following table 1 displays the datasets characteristics and how they had to be manipulated in order to answer the research question. The datasets 2015 to 2017 had to be translated from Ukrainian into English. The original sample size ranged from 1,479 cases (2014) to 2,260 case (2017). To look at AGYW, the variables gender and age were changed accordingly. All data was weighted by GfK to increase the meaningfulness of the results.

Year	2014	2015	2016	2017
Translation	No	Yes	Yes	Yes
Sample size	1479	1502	1729	2260
Selected cases by female & age = 15-24	V188 (gender) = 2 V190 (age) = 2	V189 (gender) = 2 V191 (age) = 2	V189 (gender) = 2 V191 (age) = 2	V191 (gender) = 2 V193 (age) = 2
Number of cases	194	200	219	431
Weighted data	Yes	Yes	Yes	Yes

Table 1: Overview: Description of quantitative datasets.

The GfK data are representative for the Ukrainian population. Since the data highlights knowledge of HIV, condom use, being tested for HIV, tolerance towards PLHIV and satisfaction with HIV healthcare services, the effectiveness of intervention projects can be measured by looking at these factors over time. The aim is that these results may lead to an explanation on the underlying reasons influencing the prevalence of HIV.

Table 2 gives an overview of the variables used to analyse the focus areas of behaviour change *knowledge, condom use, testing and attitudes towards PLHIV* as well as information on *quality of healthcare services*. The datasets all include the same variables but under different numbers due to some changes in the questions over the years. Further, to increase the validity of the cases (higher case number), data from all over Ukraine was included.

Indicators	Knowledge	Condom use	Testing	Attitudes towards people living with HIV (tolerance)	Quality of healthcare
Description	Correct identification of ways how to prevent sexual transmission of HIV and rejection of main misconceptions of HIV transmission	People who had sexual intercourse and regularity of using a condom during sexual intercourse in the past year	People who were tested at least once	Reporting discriminatory behaviour towards HIV positive people	Experience of the healthcare facilities for HIV testing.
Variables	2014: V206, V294, V304, V311, V312 2015: V207, V302, V312, V319, V320 2016: V207, V305, V315, V322, V323 2017: V209, V321, V331, V338, V339	If V254 (2014), V260 (2015), V263 (2016), V273 (2017)=1 2014: V259 2015: V265 2016: V268 2017: V284	2014: V273 2015: V279 2016: V282 2017: V298	2014: V233, V237 2015: V239, V243 2016: V240, V244 2017: V242, V246	If V273 (2014), V279 (2015), V282 (2016), V298 (2017)= 1, 2 or 3 2014: V278 2015: V284 2016: V287 2017: V303
Focus groups	Females all, youth all, female youth (AGYW)	Females all, youth all, female youth (AGYW)	Females all, youth all, female youth (AGYW)	Females all, youth all, female youth (AGYW)	Females all, youth all, female youth (AGYW)

Table 2: Choice of indicators to measure the influence of HIV prevention projects.

The knowledge indicator consists of five different variables meaning that five different answers had to be correct. An explanation of the variables and the sample size of the focus groups can be found in appendix 3 and 4. The percentages were then looked at among the different focus groups and for the four years respectively.

This was followed by the calculation of the mean. The same steps were taken for the tolerance indicator. For the condom use indicator, a prerequisite was that the case had sexual intercourse ($v254=1$). A prerequisite to judge the quality of healthcare was that the cases were tested for HIV at least once. The univariate analyses were conducted in SPSS to see the average change over time of the selected variables. Limitations of this data includes that in some cases the case number was small for female youth (appendix 4).

5.2) Qualitative Data

Qualitative data was collected through semi-structured interviews. The participants were adolescent girls and young women and were acquired through snowball sampling (Bryman 2012:424). Most interviewees were contacts and acquaintances who contacted other potential participants. This resulted in around 20 contacts from, which a total of twelve were interviewed. All interviews, except one, were done in English without the need for a translator. In the one example where a translator was recruited, the translator was briefed prior to the interview on the research aim and questions for the interview. Translation was done during the interview so that the researcher could ask the questions. Table 3 provides an overview of the period in which the interviews were conducted, number of interviews as well as approximate number of open-ended questions asked and the duration of each interview.

Time frame	Number of interviews	Number of questions	Duration of interview
December 6th 2018 to December 21st 2018	12	~ 30	~ 45 minutes
Participants	Adolescent girls and young women aged 19 to 23 ¹⁰		

Table 3: Overview: Qualitative interviews.

After each interview, the participants were asked to fill out a short questionnaire concerning personal and socio-economic data as well as preventive behaviour (condom use) (appendix 5). The interview guide (appendix 6) was pilot tested and a colleague from the monitoring and evaluation department at GIZ Ukraine as well as a fellow student were consulted. The goal was to conduct around 10 to 15 semi-structured interviews and the data collection ended after twelve interviews since saturation was achieved (Tracy 2010:841). During the final interviews, no new themes were brought up, which was already the case during the seventh interview. However, there was still a desire to continue the research process to not miss any valuable information. Further, during and right after the interviews notes on behaviour of the interviewee as well as specific topics discussed were collected. The interviews were roughly thematically analysed

¹⁰ This is an estimation. Not every participant gave her exact date of birth.

while data collection was still ongoing. After the end of the research phase, interviews were thematically analysed with the support of NVivo. Key quotations and/or words from the qualitative interviews supported by observations are presented in the findings and discussion chapters.

Prior to the data collection phase, assumptions included that the quantitative data concerning the prevalence of HIV would show positive results and thereby to some extent prove the effectiveness of HIV prevention projects and programmes. This is another reason why qualitative interviews were conducted. They provide real-life examples and experiences from the perspective of the target group. Kiev was chosen as the research site for the qualitative interviews as it has one of the highest HIV rates in Ukraine (PHC 2017). Additionally, looking at a specific city is considered as interesting and feasible for this research in view of time and financial resources constraints. Even though it may not provide an overall picture of the situation in Ukraine, having a focus can result in more detailed and rich answers about the situation in Ukraine's capital.

5.3) Challenges Resulting from the Mixed Methods Study

Challenges included the sensitivity of the topic in focus (see also 4.5 *Ethical Considerations*). In general, mixed methods research aims to have both quantitative and qualitative samples as similar as possible. This entails that the most appropriate sample for this research would have included the participants from the qualitative interviews also in the quantitative dataset. This cannot be guaranteed since the researcher did not collect the quantitative data. The age range in the quantitative data includes cases below 15 years of age. The qualitative data ranged from 18 to 24 years. This discrepancy should be kept in mind when further interpreting and combining the data. Another irregularity between the two data sources is the areal focus. The quantitative data includes all Ukraine whereas the qualitative data focuses on the capital city, Kiev. This has the advantage that one highlights one particular location and situation, but the results could have been stronger if interview participants would come from different parts of Ukraine. Nevertheless, some interview participants were born or still had family in other areas of Ukraine, which brought new perspectives on HIV education and healthcare services. Further, the interviewees consisted solely of university students. On the one hand, this does not entirely represent this age group. On the other hand, around 90 percent of female Ukrainians are enrolled in tertiary education (UNESCO Institute of Statistics 2017). The benefit was that nearly all of them were fluent in English and only required little support with a translation app. However, one still has to remember that English is not the native language of the participants, which may have influenced the richness in answers to some extent. This, however, has not been noticed during 90 percent of the interviews. Overall, participants were very engaged in answering the

question and reporting their perspectives. One interview required a translator, which led to some challenges. During the translation process, some information may have been changed or even lost. Finally, the qualitative research faces social bias: People tend to answer questions aiming to satisfy the interviewer and to fulfil the societal expectations instead of giving their honest opinion. The interviewees may not have answered honestly and may have been influenced by the presence of the interviewer and translator. By reassuring the interviewee about the importance of her knowledge and experience, this was aimed to be avoided. Finally, the process of collecting and analysing this richness of data was very time consuming.

5.4) Ethical considerations

The ethics during the quantitative data collection could not be influenced. The dataset did not include any data on name, address or HIV status, which ensured the anonymity of the survey participants.

One main concern in qualitative research is to exploit the interview participants for my research without making them benefit. Some interviewees stated that they are very interested in participating and benefit by practicing their English. HIV is a sensitive topic, which is why prior to the interviews participants received a consent form, which included information on the interview topic and the aim of the study. The consent form also ensures the privacy and anonymity of the participant and makes her aware of her rights to withdraw from the study at any time without facing any consequences (appendix 7). Signing the form was voluntary. Further, the interview was structured in a way that personal questions were asked mainly in the end so that the interviewee had the chance to get more comfortable to talk about HIV.

Additionally, if interviewees stated some wrong facts regarding HIV, they received correct information afterwards. Finally, the research results will be shared with those who are interested. Participants' received a number to ensure their anonymity (1 to 12).

5.4.1) Positionality

This research is not free from the position of the researcher. My background is in public health and my previous internship where I worked in one particular HIV prevention programme equipped me with knowledge on the topic as well as with assumptions. Therefore, during the interviews, it was important for me to hold back with certain information to not influence the participant's answers and in the end potentially also the results. Further, I reassured the interview participants about the value of their knowledge. Nevertheless, the unequal relationship may never be completely eradicated, which is why it is important to reflect on these issues (Creswell 2007:104-141).

5.5) Reliability, Validity & Trustworthiness of Data

The quantitative data is considered as reliable and valid as the data is collected on a regular basis by a professional research company and consists of a representative sample size of the whole population of Ukraine. Youth all over Ukraine was weighted to reach a representative number in this age group and to ensure a reliable analysis. Missing values were excluded in the analysis and were low in most of the selected variables general. Simultaneously, the researcher did not monitor the process resulting in some uncertainty. However, the research is documented transparently and is conducted by a trusted agency, which increases the reliability and validity of the data. Even though data on HIV positive people and new cases is collected regularly, the number of people living with HIV is an estimation and higher numbers are assumed to exist (UNAIDS 2017b). The questions of the interview guide concerning the access of the physician's premises for HIV testing (availability, accessibility, accommodation, affordability and acceptability) were based on Roy Pechansky's and J. William Thomas' *Concept of Access* (1981) which increases the reliability and validity of the data obtained through these questions since it has been pilot tested in advance (Bryman 2012:264). The additional questions were pilot tested and sent out to two Ukrainians who fulfilled the characteristics for the target group. Comments through the pilot testing were incorporated in the interview guide and questions were adapted accordingly. The credibility of the research results from the interviews could have been increased by sending them to some participants. However, due to time constraints this was not possible.

6) Results & Findings

Adolescent girls and young women in Ukraine are the focus of this research. Do the prevention projects mentioned in appendix 1 show an effect on AGYW and consequently influence the prevalence of HIV? How have the behaviour, attitudes and view on quality of healthcare services for HIV among AGYW changed and how do these factors look like in comparison with all females and the overall youth in Ukraine? This chapter presents results and findings from the quantitative and qualitative data. It starts with the change of HIV prevalence from 2000 as a reference value and 2014 to 2016/2017 (figure 8). This is followed by looking at the different factors of behaviour change: knowledge of HIV, condom use, being tested for HIV, tolerance towards PLHIV and satisfaction of healthcare services focussing on HIV.

6.1) Results of the Quantitative Analysis

6.1.1) Health Outcomes

Figure 8 shows the PLHIV in Ukraine by year and age group and gender.

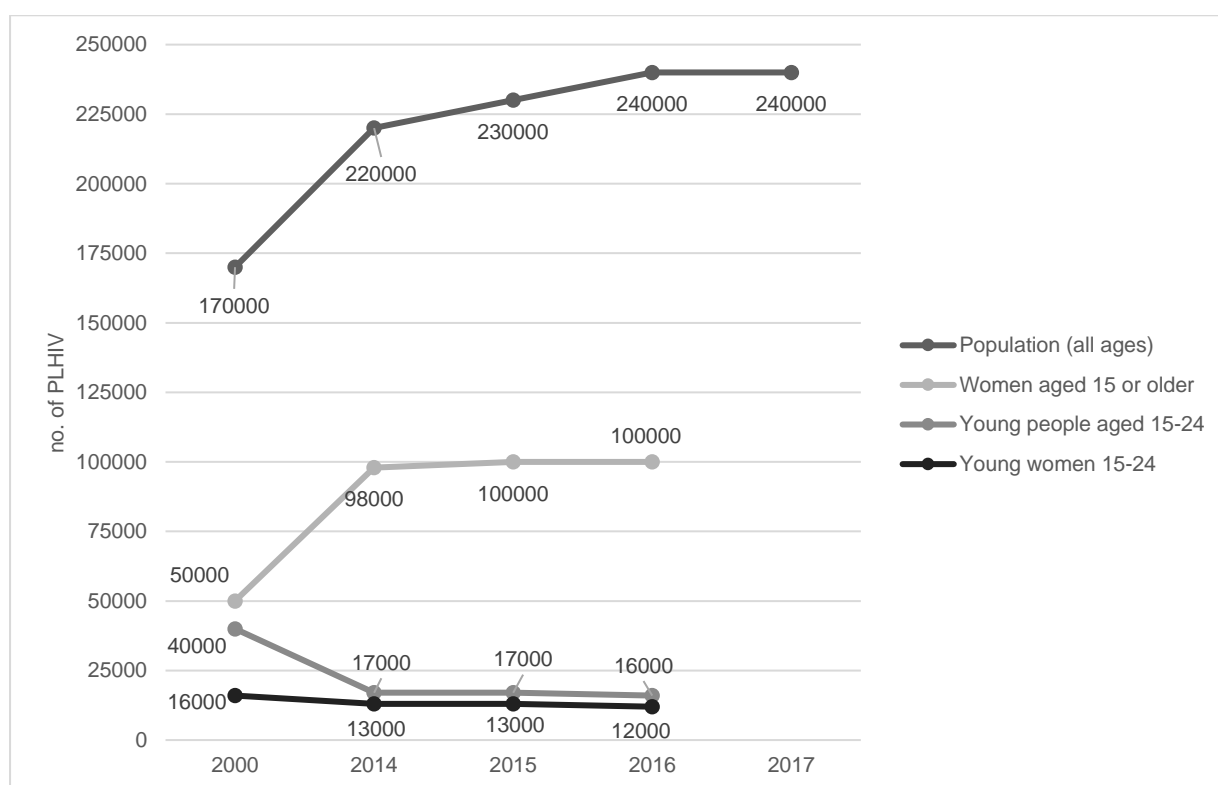


Figure 8: People living with HIV in Ukraine 2000 and 2014 to 2016/2017.

Based on: UNAIDS 2017e.

The year 2000 is used as a reference value to better understand the change in number of PLHIV. For 2017, there is no data for the different population groups yet. In general, the overall increase of PLHIV becomes evident. Between 2014 and 2015, there was a significant increase

among women aged 15 years or older. This can be associated with the conflict in eastern Ukraine, which hinders the population's to access basic health services (Lekhan et al. 2015:xv,12; UNHCR 2018; University of Oxford 2018). From 2015, the trend of PLHIV is steady or downward. This seems positive for Ukraine since the global trend of PLHIV is still on the rise (UNAIDS 2017h). Young women aged 15 to 24 living with HIV account for three-quarters of the overall youth living with the immune impairing virus. Potential reasons include their high vulnerability as depicted in the theoretical chapter as well as that AGYW may also be sex workers who are another key vulnerable group for HIV. Finally, the efforts by prevention projects to educate health personnel in recognising symptoms and receiving trainings for testing may influence the increasing trend of PLHV (GIZ 2018).

The quantitative datasets provide an overview of changes in knowledge (transmission of HIV, how can you protect yourself), behaviour (condom use and being tested for HIV), attitudes (stigmatisation of PLHIV) and satisfaction with quality of healthcare services. These indicators were chosen to find out whether they may have influence on the overall prevalence of HIV. The different indicators are sorted according to the themes provided by the Adapted Outcome Model.

6.1.2) Health Promotion Actions & Outcomes

Figure 9 shows the changes in knowledge among all females in Ukraine, all Ukrainian youth and female youth (= AGYW) from 2014 to 2017.

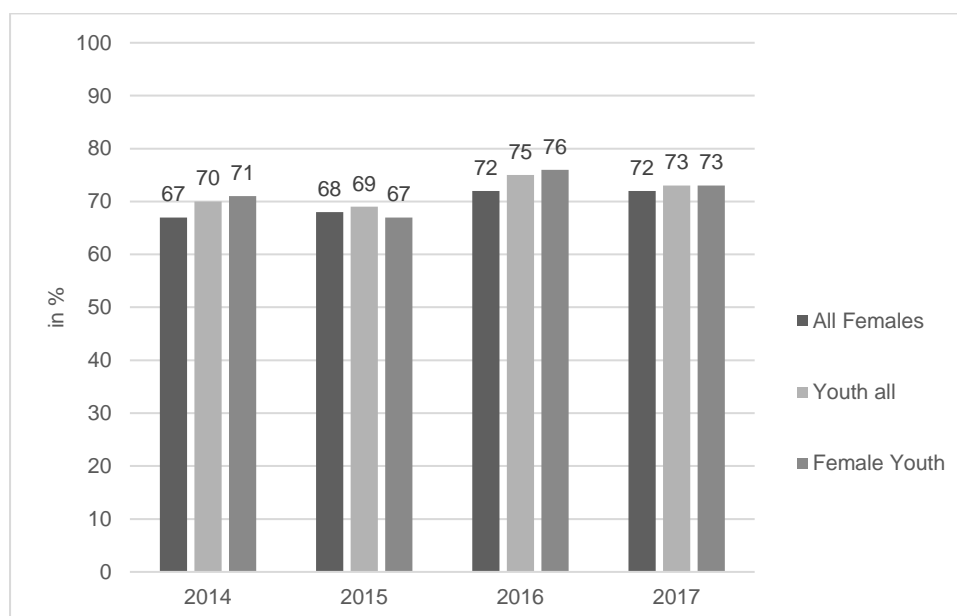


Figure 9: Knowledge of Ukrainian females, youth and female youth 2014 to 2017.

Values were rounded.

In general, females in Ukraine increased their knowledge in HIV by five percentage points between 2014 and 2017. Compared to overall youth and all Ukrainian females, female youth has higher (2014 and 2016) or equal knowledge levels (2017) except for the year 2015. The target group especially lacks knowledge in ways the HI-virus is not transmitted, such as through mosquito bites or sharing food with an HIV-positive person. Around half of the group answered these questions correctly. Nevertheless, in 2017 the questions were answered right by 61 percent of the female youth. This shows that there is a slow progress in knowledge building. Continuing the efforts with interactive teaching modules about HIV as done by the GIZ project in both schools and universities may contribute to better results by 2020.

The trend in condom use among Ukrainian females, youth and female youth from 2014 to 2017 is displayed in figure 10.

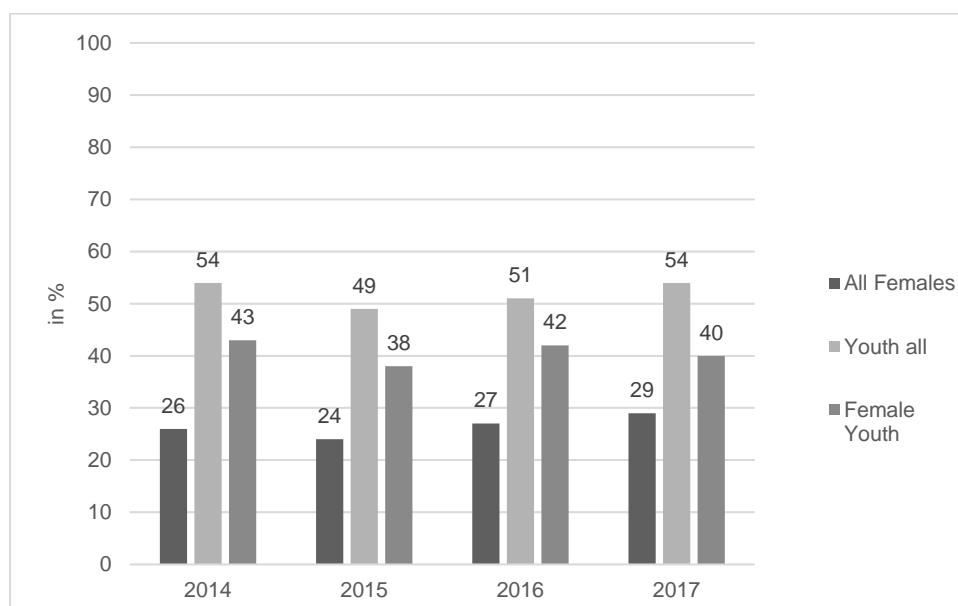


Figure 10: Condom use of Ukrainian females, youth and female youth 2014 to 2017.

Values were rounded.

Even though the willingness to use condoms has increased over time, the actual use is still low. Of those who had sexual intercourse, less than half of AGYW (40 percent) always or almost always used condoms during sexual intercourse in the past year. Reasons provided in the survey for this trend are the trust in their partner and having only one partner. From 2016 to 2017 the condom used dropped by 2 percent among the target group. Nevertheless, young people use condoms more regularly compared to females of all ages. This trend shows the discrepancy between knowledge of HIV and condom use. Ukrainians are aware how to protect themselves from HIV but do not act accordingly although there have been campaigns in Ukraine targeting condom use. This is in contrast to the findings of the literature review stating that prevention projects focussing on condom use are particularly successful (Townsend, Mathews

& Zembe 2013). An additional reason may be the perceived distance towards the disease, which was highlighted by Airhihenbuwa and Oregon (2000:13) and will be further elaborated in the qualitative data findings and in the discussion chapter. The second aspect of preventive behaviour which was investigated was the testing for HIV (figure 11).

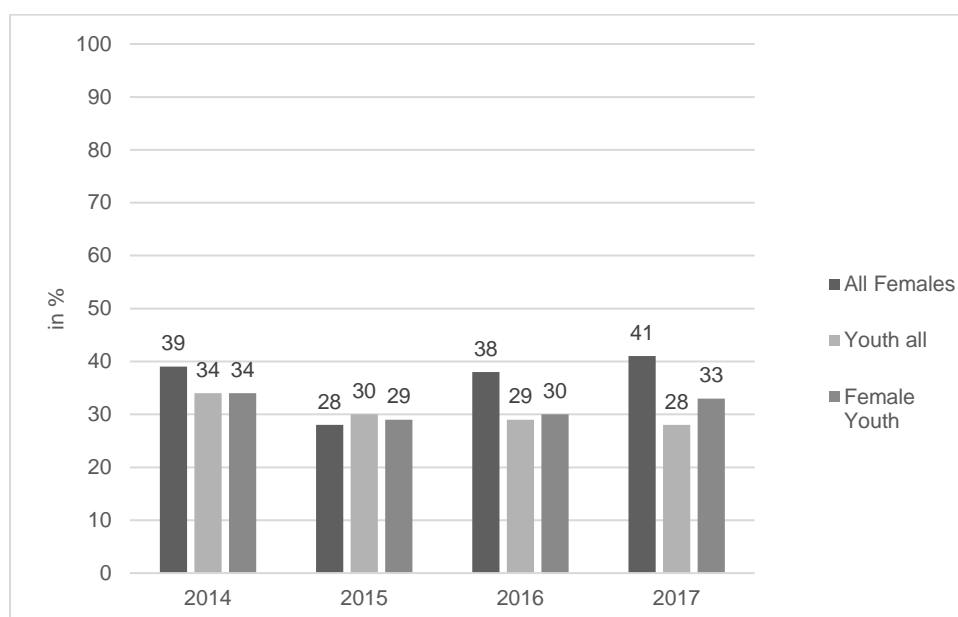


Figure 11: HIV-testing of Ukrainian females, youth and female youth 2014 to 2017.

Values were rounded.

The testing behaviour does not mirror the knowledge of Ukrainians about the risks of HIV and acting upon the information. Thus, the results are similar to the condom use variable. However, the variables included in the knowledge indicator do not give information whether Ukrainians are aware of the importance of knowing the HIV status.

Even though many HIV preventing campaigns promote to be tested for HIV, the majority of female and Ukrainian youth population does not get tested. In 2017, 33 percent of female youth was tested for HIV compared to 34 percent in 2014. This shows that more awareness needs to be raised among the target group in order to increase the testing rates. The assumption that the increased knowledge about HIV increases testing rates (chapter 1.4.2) and thus, results in a rise in number of positive HIV diagnoses and PLHIV is not verifiable through the empirical data. The results confirm the information found by other studies, which stated that people are tested too late and that only half of the Ukrainian population knows their HIV status (University of Oxford 2018).

Barriers in the healthcare system may influence the testing behaviour, which will be further elaborated in the qualitative findings and later discussion chapter.

People's attitude and tolerance towards PLHIV is an important factor when it comes to HIV prevention. As concluded in the literature research, stigma has to be overcome in order to successfully combat the HIV epidemic. Between 2014 and 2017, AGYW have not shown significant differences in discriminatory behaviour towards PLHIV (54 percent in 2014 compared with 55 percent in 2017) (appendix 8). Further, there is no notifiable difference in attitudes between the three groups. One positive trend can be noted among all females in Ukraine: In 2014, 61 percent would show discriminatory behaviour whereas in 2017 this value decreased by 5 percent to 56 percent (appendix 8). One reason that there was no particular development in the past four years may be that people are overwhelmed with the information they receive in public without having a forum for discussion. The qualitative interviews provided further insights into attitudes towards PLHIV.

6.1.3) Intermediate Health Outcomes

The satisfaction with healthcare services for HIV was within the timeframe (2014 to 2017) above 90 percent (appendix 9). People included in this analysis were tested at least once for HIV. The results show that if people are tested, the quality is rated as adequate and the health services are friendly and informative. The general health system in Ukraine struggles with corruption and providing access for all (Lekhan et al. 2015:xvi; WHO 2016b:20; UCMC 2018). Potential reasons that HIV services are of better quality could be the joint-efforts of the Ukrainian Government, national and international organisation to ensure universal access to HIV care. Unfortunately, the qualitative interviews could solely give insights into the general health system and how HIV healthcare services are imagined since none of the participants were tested at the time of the interviews.

6.2) Findings of Qualitative Interviews

The findings of the interviews largely mirror the quantitative results. The interviews provided valuable insights into the knowledge of AGYW and on their opinion of the healthcare system in Ukraine. The subsequent paragraphs are structured following the Adapted Outcome Model.

6.2.1) Health Promotion Actions & Outcomes

In general, the participants are aware of HIV. All of them were able to describe the virus' transmission ways and preventive measures. However, only one participant stated the fact that Ukraine suffers from an epidemic. Most of the AGYW were unaware that Ukraine struggles with the virus' spread. Some also confidently stated that on the African continent, it would be a more severe situation, which is not the case as seen in figure 1. Further, all interviewees knew that a

condom protects them from the virus. Nevertheless, they were unsure about the actual safety of a condom and whether it can protect 100 per cent from the virus (e.g. interviewee 7).

Most of the interviewees said that the parents rather than solely schools should be responsible for educating their children on safe sex behaviour and sexually transmitted diseases. Interviewees also stated that this should not be done too late since from their experience teenagers in Ukraine enter their sexual life often before the age of 15. In regards to visibility of campaign banners for HIV prevention, only one interviewee specifically remembered banners in the metro station advertising for a 'free HIV testing' website. Most of the interviewees stated that they do not pay attention to the outdoor advertisement since they feel not threatened by the disease or they do not have time to read the information on the posters. One participant suggested using more social media channels for advertisement. Her argument was that her generation spends most time on platforms, such as Facebook, where advertisement can easily be placed.

None of the young women were tested for HIV and therefore, did not visit any of the testing/consulting/treatment facilities, such as clinics/hospitals or AIDS Centres. When asked about where to be tested the assumption of a general clinic for blood tests was made by most of the participants. However, none of them could mention specific places where to be tested. Nevertheless, most of the interviewees are confident that they can find out where to get the necessary services if needed. Ways on how to obtain information ranged from asking family and friends to "just googling". When asked why they have not been tested, the young women stated that they do not think it would be necessary since they pay attention to risky situations in which HIV could be transmitted. In order to ensure to still get information on healthcare facilities in Ukraine, participants were asked to describe their regular clinic/hospital.

All interviewees stated that they would not change their behaviour if they knew someone who would be HIV-positive. Some may be a bit careful and aware that the person is ill to some extent. One participant said that it is like cancer, the person is of course not completely healthy. However, the interviewees were aware that the character does not change due to the infection, which is why follow-up questions like "Would you end your friendship with a friend of yours who is HIV-positive?" were denied. This observation is in contrast to the quantitative results where discriminatory behaviour is still high. A bias during the interviews may be that people do not admit how they actually would act with PLHIV or that it may be difficult for the participants to imagine their reaction since all of them stated that they do not know anyone personally who has HIV.

6.2.2) Intermediate Health Outcomes

During the interviews, the Ukrainian health system as well as differences between public hospitals and private clinics were frequently discussed. As a student in Ukraine, each university has an assigned public hospital – also called state polyclinics, which covers all students and people living in the neighbourhood. Interviewees stated that the healthcare quality in public hospitals, which are funded by the state, is lower compared to private clinics. The argument was that if you do not pay any money (officially) for the service, it must be worse in quality. Participants were unsure whether testing, consultation and treatment for HIV might have to be paid. According to the Ukrainian HIV policy, it should be free as it is covered by the State budget and a Global Fund grant. They assumed that there would be differences in the quality of an HIV test between the two different healthcare services. In general, the young women expected that they would have to pay for medicine for HIV treatment no matter to which hospital they go. They stated that even though the Government may cover the visit of a doctor, the Ukrainian health system works in a way where you usually pay something. This could be cash payments but also necessary resources, such as gloves (interview 5). Here interviewees mirror the situation of the Ukrainian health system as described in the literature (WHO 2016b:20; UCMC 2018). According to the interviewees, payments are necessary because the state does not pay the doctors very well. Therefore, it is also understandable and most of the participants are willing to pay (interview 4). Further, they feel like they receive better care once some form of payment was made. Finally, participants are sure that as long as you have enough money you will be taken care of.

The environment in public hospitals also does not make a visit very pleasant. The often long queues seem to cause conflicts between the patients making the atmosphere uncomfortable as mentioned by several interviewees. The young women stated that it is often loud and overcrowded. Further, the interviewees described the design as old-fashioned (frequently described as “Soviet Union style”) and the building as well as equipment and furniture are in need to be renovated or replaced. Due to the high number of people visiting a state hospital, there are often no seats, which results in patients standing and leaning against the walls. Students have the choice to go to their assigned public hospital or to go to a private clinic and pay for the as described much better services. Another factor, which more than one participant brought up, was that they have increased trust in both doctors and medicines in private clinics. Reasons included that the medical education is not of a high standard. Straight after the university, each doctor has to work in public hospitals, which results in less skilled health personnel. To be able to work in private clinics, a doctor requires a certain amount of experience. Further differences between private clinics and the public hospitals included the length in waiting time. In private clinics, the waiting time is nearly non-existent whereas in public hospitals waiting time can range from 20 minutes to three hours as stated by the participants.

The atmosphere and overall situation may hinder people from visiting a doctor. Nonetheless, participants showed some understanding for the situation in polyclinics. They mentioned that hospitals often do not have resources for the much needed renovations and that the state does not provide them with enough funding. In the paragraphs above, public hospitals in general were described. The young women who participated in the interviews imagined the situation for HIV testing, consultation and treatment to be similar. This may hinder them from visiting a doctor and therefore, may contribute to the low testing rates and consequently negatively influence the HIV prevalence. Thinking the scenario further, even though a person may visit a public hospital to get HIV tested, the expectation according to the interviewees may be a low skilled doctor and a testing result, which may not be reliable. The patient's anonymity may not be guaranteed since the hospitals are assigned and one may know other people from the neighbourhood. Further, if the result of the HIV test would be positive, the patient then would face additional barriers, such as paying for treatment reflecting the interviewees' perspectives. The young women also stated that the opening hours are often inconvenient since your responsible doctor has different visiting hours every day, which also often conflict with working and studying hours, e.g. Interviewee 12: "The system hinders me from going [to a doctor]." Therefore, a HIV-positive person may have to skip working hours and be flexible in order to receive consultations and treatment from a doctor. Since there is no insurance scheme in Ukraine, missing working hours may not be excused in some industries in Ukraine, which was also stated by some interview participants. Thus, visiting a doctor may also result in missing wages and not being able to fulfil other needs. In comparison to the quantitative results, which showed a high satisfaction of healthcare services among those who were tested for HIV, the imagined situation by the interview participant might not mirror the reality for being tested for HIV.

6.2.3) Silence around the HIV Situation

The final theme, which was brought up several times by the participants was the perceived silence regarding the severity of the HIV situation in Ukraine. Although there was no direct question regarding this issue, several interviewees mentioned that HIV and health in general should be more talked about in the Ukrainian society. Interviewee 5: "HIV is not always around as a topic" or interviewee 12: "It is a problem of our country and we should speak about it." The overall consent was that people might acknowledge that HIV and other diseases exist but they do not necessarily act upon it and just continue with the next topic concerning other parts of their lives. Interviewee 8: "The country is not concerned of HIV even though we have high rates. We should promote to get tested." This statement is particularly interesting as a significant number of prevention strategies focus on mass communication to raise awareness among the Ukrainian society, e.g. the GIZ HIV prevention project (appendix 1). However, as explained

before, most interviewees did not notice the billboards and city lights advertising for HIV testing or the issue in general. The interviewees demanded that HIV and health should be discussed more often in the daily routine of Ukrainians. One particular statement described the HIV situation in Ukraine very well: "It's not Voldemort in Harry Potter but it seems like it is. Nobody says the name, nobody discusses it" (interviewee 4), which clearly underlines the demand for more open discussions around this topic. Increasing people's knowledge on the severity of HIV in the Ukrainian context by bringing HIV as a topic for regular debate may also influence the overall prevalence positively. Researchers confirm this perception of the interview participants by calling the HIV epidemic in Ukraine also the silent epidemic (University of Oxford 2018).

7) Discussion

The following paragraphs discuss the interrelations and discrepancies of the different results and findings of the literature research, qualitative and quantitative data, which are displayed in a table in appendix 10. The analytical model with its four different levels *health promotion actions and outcomes*, *intermediate outcomes* and *social and health outcomes* provides thematical guidance in this chapter.

7.1) Health Promotion Actions & Outcomes

To begin with the *healthy public policy and organisational practice* theme, which is also included in the theoretical framework, the various legislations and structural practices in Ukraine have been elaborated in chapter 1.4.2. They are a vital organisational prerequisite for providing *effective health services* and achieving positive health and social outcomes. However, due to the ongoing conflict in eastern Ukraine, resources to ensure the successful implementation of the legislation as well as for the ongoing health system reform are limited (Lekhan et al. 2015:xv-xvi). National and international organisations support the Government in preventing HIV and in reforming the health system (Health SAG, ca. 2014:24). Their actions may still have an impact as long as the Government supports them to the extent possible.

As explained in the theoretical framework and literature review, health promotion activities within *education and health literacy* mainly include school education or mass media campaigns and are used by several health interventions projects to increase knowledge of HIV in order to positively influence the virus' prevalence. Increased knowledge among the society may also influence healthy public policy and organisational practice outcomes. The society could hold politicians accountable and point out discriminatory behaviour towards PLHIV.

In Ukraine, the positive trend in knowledge of HIV and its transmission pathways influenced primarily through school interventions as implemented by the GIZ HIV prevention project was confirmed both by quantitative and qualitative data. However, the findings' tendency does not confirm the assumption that insufficient knowledge as a result of the lack of sexual education in schools may contribute to the ongoing transmission. Another argument could be the quality and contents taught during these lessons. To further increase the knowledge community involvement is crucial to find out what adolescent girls and young women lack in knowledge and how messages can reach the target group (Fonner et al. 2014). A focus should be on understanding the severity of HIV in Ukraine, which was pointed out during the qualitative interviews.

Behaviour change including condom use and being tested has so far not been significantly influenced by HIV prevention projects as confirmed through both quantitative and qualitative findings. This stands in contrast to the interventions investigated by Townsend, Mathews and Zembe (2013), which revealed those focussing on condom use as the most effective ones. It could be possible that HIV prevention projects in Ukraine need to focus more on condom use, such as contraceptive provision and comprehensive sex education (Salam et al. 2016). The GIZ HIV prevention did a campaign on condom use to prevent HIV, which has not proven to be influence Ukrainians' use of condoms according to the quantitative data. In this case, cultural aspects may play a role. Health in general and especially sexual health are not openly discussed as stated by the interviewees. Public campaigns on condom use may therefore not be appropriate for the Ukrainian context.

Further, several theories confirm the shortcomings of HIV prevention projects, which have been identified by both the quantitative and qualitative data analysis. Freimuth (1992:101) states that people have a certain distance to the HI-virus and therefore do not protect themselves. One suggestion for improving this situation is to target people's emotions since these greatly influence the behaviour (Michal-Johnson and Bowen 1992:153). Current prevention projects in Ukraine may not sufficiently target the emotions of their focus group, which was confirmed by several interview participants. The distance to the disease can also be transferred to the testing behaviour of adolescent girls and young women. Mass communication campaigns, which may focus on the importance of HIV testing, are not recognised by AGYW since they do not feel addressed by their messages. In Ukraine, one-third of adolescent girls and young women were tested for HIV between 2016 and 2017. Arguments from the interview participants for not being tested included that they do not see the need to be tested due to their perceived distance to the disease. This opinion may change if AGYW would understand their vulnerability and the severity of the situation in Ukraine as pointed out before. Channels for increasing AGYW's awareness

on the issue of HIV could include TV debates, regular teaching in schools as well as advertisement placed on social media platforms each of them highlighting the situation in Ukraine.

Communication campaigns can contribute to *social mobilisation*, which is regarded as one essential aspect influencing both health literacy and healthy public policy and organisational practice outcomes. Awareness of HIV/AIDS through targeted mass communication campaigns and events can create a of social movement (= collective efficacy), which may influence the society but also political decision-makers (Bandura 1998:65-67). Campaigns together with increased health literacy influence stigmatisation of PLHIV as well as contribute to lower HIV prevalence (Parker 2000). The empirical findings show some inconsistencies in the discriminatory behaviour among adolescent girls and young women in Ukraine. In general, around half of AGYW presented intolerant views towards PLHIV with no significant change throughout the years. The qualitative data provided no explanation for these results since all participants reported high tolerance towards PLHIV. Other studies highlight the importance to reduce stigmatisation of PLHIV for successful HIV prevention (Brinsdon, Abel & Desrosiers 2016; Jaworsky et al. 2016). The qualitative findings showed general low stigma towards PLHIV and could be the result of information bias or the influence of the interviewer. Stigmatisation of PLHIV should also be considered when looking at *effective health services* since it can result in unequal access. The current health system in Ukraine having its assigned hospitals and where a person cannot choose his/her doctor freely may contribute indirectly to stigmatisation since anonymity may not be guaranteed. The study by Brinsdon, Abel & Desrosiers (2016) highlights the importance of educating health personnel regarding HIV as well as to address structural barriers with input from PLHIV.

7.2) Intermediate Health Outcomes

The above discussed dimensions *healthy public policy, education, health literacy and social mobilisation* are pre-requisites for reaching intermediate health outcomes. Effective health services are dependent on state budget as well as legislations and empirical evidence. Thus, the ongoing health system reform in Ukraine has to be fully implemented in order to increase the health services' effectiveness (Health SAG ca. 2014). Health services are effective when they show a functional independence as well as equity as confirmed by the theories (Brinsdon, Abel & Desrosiers 2016). This entails that everyone can access the services for HIV no matter their social or economic status. The data analysis found a significant discrepancy in the access to healthcare services. Officially, it is ensured by providing the spatial and financial accessibility (free testing, consultation and treatment), which is crucial to trigger efficiency in this area of health prevention. However, the interviews reflect other studies' findings and mirror the context

in (Ukraine Health SAG ca. 2014:10). Participants showed low trust in the health system, i.e. in the quality of public hospitals, as well as talked about concrete and regular forms of corruption, i.e. reimbursing the doctor even though services should be free since s/he was so friendly. These factors indicate that there is inequality in healthcare concerning HIV prevention in Kiev. The ongoing healthcare reform addresses these issues and aims to change the situation. Future research should focus on, which groups suffer most.

The access of effective health services also considers the quality of the provided services. The results from the quantitative data showed that adolescent girls and young women were satisfied with the services for HIV testing. This contrasts expectations from the interview participants who had to imagine the HIV testing or consultation situation since none of them were tested for HIV at the time of the interview. They envisaged the situation for HIV care similar to the general healthcare situation, which they rated as overall bad especially when it comes to public hospitals. One main reason may be that the interviewees never were tested for HIV. They solely described the general situation of the healthcare situation and how they imagined it to be for HIV testing or consultation. This shows the difference between reality (based on the quantitative results) and imagination. According to the survey data, the quality of HIV testing and consultation seems to be high, which could be a result of the joint-efforts of the Ukrainian Government, national and international organisations (Health SAG ca. 2014). Nonetheless, people are not utilising the services enough since only 37 percent of PLHIV are receiving ART treatment and 33 percent of adolescent girls and young women were tested between 2016 and 2017 for HIV (UNAIDS 2017a). Suggestions from other empirical evidence to increase the HIV prevention's effectiveness included the combination of sexual education with sexual health services tailored to adolescents' needs (Coyle et al. 2013; Elliott et al. 2013; Salam et al. 2016). Whether the current healthcare system in Ukraine has the capacities for guaranteeing access for all, cannot be confirmed through this study.

7.3) Health Outcomes & Gender Equality in Ukraine

Although the different activities to increase health literacy and the effectiveness of health services are slowly making progress, the incidence rate is still on the rise. Further, the proportion of young women living with HIV in Ukraine is around three times higher than that of their male counterparts (UNAIDS 2016b). Reasons may include that women are more frequently tested and diagnosed than men (Vandormael et al. 2018), which can be also confirmed by the quantitative data (appendix 11). Reasons may not only be the general spread of HIV but also the fact that through increased knowledge, doctors pay more attention to symptoms and Ukrainians pay more attention to their own health, which result in a higher frequency of diagnoses. Nevertheless, the data shows that due to the perceived distance to the HI-virus, it

leads to being tested in a later stage of the infection. Here, the Ukrainian context should not be neglected. The ongoing conflict increases the people's vulnerability for HIV and contributes to the virus' spread (Lekhan et al. 2015:xv; UNHCR 2018; University of Oxford 2018). When designing context specific HIV prevention projects, it is important to consider these factors. The projects should also focus on raising awareness on the severity of HIV in Ukraine as explained in the health promotion actions and outcomes section of this chapter.

In all aspects of the health promotion activities and outcomes from HIV prevention projects, women should be especially considered. The increased vulnerability of adolescent girls and young women, which – based on the findings of the qualitative data – the target group does not seem to recognise, is an important aspect to sustainably prevent HIV transmission and lowering its prevalence. As pointed out by the theory and literature review, the sexual and reproductive health system of AGYW has unique needs, which can only be satisfied when health services are effective and healthy public policies take this into account (Thomson et al. 2018). In Ukraine, women have low power in the political decision-making process. Further, women still disproportionally face domestic and sexual violence. Together with their low representation in politics and their higher share of work in low-paid sectors, women cannot fulfil their full potential as well as influence significant decision-making processes (Bertelsmann Stiftung, BTI 2016:17; United Nations Ukraine ca. 2015). Without gender equality, HIV cannot be prevented and the access to HIV healthcare services cannot be ensured (Vandormael et al. 2018). Thus, equitable behaviour and conditions have to be further promoted in order to prevent future HIV infections. This does not only refer to political processes but also concerns the parenting situation, accepting and promoting women's rights as well as protecting their health (Promundo, UNFPA, MenEngage 2010:109).

This discussion showed that different dimensions of health promotion outcomes and activities strongly influence and depend on each other. Ukraine has to implement the healthcare reform and focus its efforts on the different aspects of the Adapted Outcome Model whilst especially considering adolescent girls and young women's needs and bringing HIV into a public debate to contribute to raising awareness of the severe situation in the country. Through this, Ukraine may be on its way to contribute to the global agenda for fighting HIV as stated in the SDGs target 3.3 (United Nations 2016; United Nations Statistics Division 2017).

8) Concluding Remarks

In Ukraine, HIV prevalence is on the rise. It has the second highest HIV rates in Europe with sexual transmission being the main pathway to contract the HI-virus. A number of prevention strategies are ongoing and implemented by both national and international organisations but *how do they influence the HIV prevalence?* The Ukrainian health system is in need of reforms but the ongoing conflict in the East draws the attention for investments to other sectors (Lekhan et al. 2015:xv-xvi). Young girls and adolescent women (AGYW) have an increased vulnerability to be infected due to their social status as well as biological traits. In this study, different perspectives on the effectiveness of HIV prevention programmes, their influence on knowledge, preventive behaviour, tolerance and satisfaction with healthcare services among AGYW in Ukraine were analysed by using a mixed methods approach. Don Nutbeam's model (2000) for understanding outcomes of health interventions was adapted to assess the influence of HIV prevention programmes. Results from the quantitative and qualitative data show that In Ukraine AGYW know about characteristics of HIV and how to protect themselves. However, the use of condoms as well as HIV testing rates are low. The quantitative analysis shows that around half of all AGYW demonstrate discriminatory behaviour towards people living with HIV. Yet, findings from the qualitative interviews do not give any specific reasons. Further, the satisfaction for HIV testing services was rated as high among AGYW in the quantitative data, whereas the interview participants pointed out the low quality in general healthcare in public hospitals, which also confirmed findings from other studies. In summary and without neglecting other potential influences, HIV prevention programmes influence the knowledge of AGYW. In order to sustainably change preventive behaviour, which includes condom use and being tested for HIV, adolescent girls and young women should recognise that the country does not only face issues of conflict, recession and corruption but also an HIV epidemic. The qualitative findings suggest that one likely reason for the lack of behaviour change is the low knowledge of the severe HIV situation in Ukraine. To change this, TV debates and advertisement on social media platforms could be placed to especially reach adolescent girls and young women. Further, the health reform needs to be completely implemented and the Government should aim for increasing the population's trust in the health system. When all levels of the Adapted Outcome Model are addressed whilst simultaneously recognising the Ukrainian culture and context, both social and health outcomes may be positively influenced. Through these efforts Ukraine together with supporting organisations can contribute to the SDG 3 and its target 3.3 to end AIDS by 2030 (United Nations Statistics Division 2017).

Future research could take the perspective of young males to find out whether they identify similar barriers in healthcare access as well as adapted comparable preventive behaviour patterns and perceptions on PLHIV. The assumption resulting from the qualitative interviews

that Ukrainians are unaware of the severity of the HIV situation in the country should be confirmed through a quantitative data. Finally, the different prevention projects and programmes could be analysed to find out to what extent context and culture are considered in the different phases of the projects.

7) References

Airhihenbuwa, C. and Obregon, R., 2000. A Critical Assessment of Theories/Models Used in Health Communication for HIV/AIDS. *Journal of Health Communication*, 5(Suppl.), pp.5-15.

Airhihenbuwa, C., 1995. *Health and culture: Beyond the Western paradigm*. Thousand Oaks, CA: Sage Publications.

Airhihenbuwa, C. O., DiClemente, R. J., Wingood, G. M. and Lowe, A., 1992. HIV/AIDS education and prevention among African-Americans : A focus on culture. *AIDS Education and Prevention*, 4(3), pp.267-276.

Anderson, R., Panchaud, C., Singh, S. and Watson, K., 2014. *Demystifying Data: A Guide to Using Evidence to Improve Young People's Sexual Health and Rights*. [pdf] New York: Guttmacher Institute. Available at: <https://www.guttmacher.org/sites/default/files/pdfs/pubs/demystifying-data.pdf> [Accessed 01-05-2018].

Avert 2017a. *HIV and AIDS in Russia*. [online] Available at: https://www.avert.org/professionals/hiv-around-world/eastern-europe-central-asia/russia#footnote1_4ztk4zn [Accessed 06-05-2018].

Avert, 2017b. *History of HIV and AIDS Overview*. [online] Available at: <https://www.avert.org/professionals/history-hiv-aids/overview> [Accessed 10-09-2017].

Bandura, A., 1998. Personal and collective efficacy in human adaptation and change. In: J.G. Adair, D. Belanger and K.L. Dion, eds. *Advances in psychological science: Vol. 1. Personal, social and cultural aspects*. Hove, UK: Psychology Press. pp.51-71.

Bandura, A., 1986. *Social foundations of thought and action: A social cognitive theory*. Englewood Cliffs, NJ: Prentice-Hall.

Becker, M.H., 1974. The health belief model and personal health behavior. *Health Education Monographs*, 2(4), pp.324-511.

Bertelsmann Stiftung, BTI, 2016. BTI 2016 – Ukraine Country Report. Gütersloh: Bertelsmann Stiftung.

Beyrer, C., Baral, S.D., Walker, D., Wirtz, A.L., Johns, B. and Sifakis, F., 2010. The Expanding Epidemics of HIV Type 1 Among Men Who Have Sex With Men in Low- and Middle-Income Countries: Diversity and Consistency. *Epidemiological Reviews*, 32(1), pp.137-151.

Bozicevic, I., Handanagic, S., Lepej, S.Z. and Begovac, J., 2013. The emerging and re-emerging human immunodeficiency virus epidemics in Europe. *Clinical Microbiology and Infection*, 19(10), pp.917-929.

Brinsdon, A., Abel, G. and Desrosiers, J., 2016. "I'm taking control": how people living with HIV/AIDS manage stigma in health interactions, *AIDS Care*, [e-journal] 29(2), pp.185-188. <http://dx.doi.org/10.1080/09540121.2016.1204420>

Bryman, A., 2012. *Social Research Methods*. 4th ed. Oxford: Oxford University Press.

Center for Disease Control and Prevention, 2012. *Principles of Epidemiology in Public Health Practice, Third Edition, An Introduction to Applied Epidemiology and Biostatistics. Lesson 3: Measures of Risk*. [online] Available at: <https://www.cdc.gov/opphss/csels/dsepd/ss1978/lesson3/section2.html> [Accessed 06-05-2018].

Chivate, P., Umate, M., Nimkar, S. and De Sousa, A., 2017. Gender differences in perceived stigma and hope in people living with HIV / AIDS: an explanatory study. *International Journal of Community Medicine and Public Health*, 4(2), pp.487-493.

Coyle, K.K., Glassman, J.R., Franks, H.M., Campe, S.M., Denner, J. and Lepore, G.M., 2013. Interventions to reduce sexual risk behaviors among youth in alternative schools: A randomized controlled trial. *Journal of Adolescent Health*, 53(1), pp.68-78.

Crawford, R., 1994. The boundaries of the self and the unhealthy other: Reflections on health, culture, and AIDS. *Social Science & Medicine*, 38(10), pp.1347-1365.

Creswell, J.W., 2014. *Research design: qualitative, quantitative, and mixed methods approaches*. [e-book] Thousand Oaks, CA: Sage Publications. Available through: SAGE Publishing website <<https://uk.sagepub.com/en-gb/eur/research-design/book237357>> [Accessed 13 March 2018].

Creswell, J.W., 2007. *Qualitative Inquiry & Research Design. Choosing Among Five Approaches*. 2nd ed. Thousand Oaks, CA: Sage Publications.

Culyer, A.J. and Wagstaff, A., 1993. Equity and equality in health and health care. *Journal of Health Economics*, 12(4), pp.431-457.

Decker, M.R., Wirtz, A.L., Pretorius, C., Sherman, S.G., Sweat, M.D., Baral, S.D., Beyrer, C., Kerrigan, D.L., 2013. Estimating the impact of reducing violence against female sex workers on HIV epidemics in Kenya and Ukraine: a policy modeling exercise. *American Journal of Reproductive Immunology*, 69(Suppl.1), pp.122-132.

Degenhardt, L., Mathers, B.M., Wirtz, A.L., Wolfe, D., Kamarulzaman, A., Carrieri, M.P., Strathdee, S.A., Malinowska-Sempruch, K., Kazatchkine, M. and Beyrer, C., 2014. What has been achieved in HIV prevention, treatment and care for people who inject drugs, 2010-2012? A review of the six highest burden countries. *International Journal of Drug Policy*, 25(1), pp.53-60.

Dellar, R.C., Dlamini, S. and Karim, Q.A., 2015. Adolescent girls and young women: key populations for HIV epidemic control. *Journal of the International AIDS Society*, 18(Suppl.1):19408.

Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH, 2015. *Public Awareness of HIV Epidemic in Ukraine 2014*. Bonn and Eschborn: Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH.

Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH, 2016. *Public Awareness of HIV Epidemic in Ukraine 2015*. Bonn and Eschborn: Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH.

Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH, 2017. *Public Awareness of HIV Epidemic in Ukraine 2016*. Bonn and Eschborn: Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH.

Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH, 2018. *Public Awareness of HIV Epidemic in Ukraine 2017*. Bonn and Eschborn: Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH.

Dutta, A., Perales, N., Semeryk, O., Balakireva, O., Aleksandrina, T., Ieshchenko, O. and Zelenska, M., 2013. *Lives on the Line: Funding Needs and Impacts of Ukraine's National HIV/AIDS Program, 2014–2018*. Washington, DC: Futures Group, Health Policy Project.

Edgar, T., Fitzpatrick, M.A. and Freimuth, V.S. eds., 1992. *AIDS: A communication perspective*. Hillsdale, NJ: Erlbaum.

Elliott, L., Henderson, M., Nixon, C. and Wight D., 2013. Has untargeted sexual health promotion for young people reached its limit? A quasi-experimental study. *Journal of Epidemiology and Community Health*, 67(5), pp.398-404.

European Centre for Disease Control and Prevention (ECDC), 2017. *The continuum of HIV care: how is Europe doing?* [online] Available at: <https://ecdc.europa.eu/en/news-events/continuum-hiv-care-how-europe-doing> [Accessed 22-04-2018].

European Centre for Disease Prevention and Control (ECDC) and WHO Regional Office for Europe, 2017. *1 in 2 people living with HIV in Europe is diagnosed late: ECDC and WHO urge improvement in testing practices*. [online] Available at: http://www.euro.who.int/en/media-centre/sections/press-releases/2017/1-in-2-people-living-with-hiv-in-europe-is-diagnosed-late-ecdc-and-who-urge-improvement-in-testing-practices?utm_source=WHO%2FEurope+mailing+list&utm_campaign=a50ef59d07-News_highlights_December_2017&utm_medium=email&utm_term=0_60241f4736-a50ef59d07-93479705 [Accessed 23-04-2018].

European Centre for Disease Prevention and Control (ECDC) and WHO Regional Office for Europe, 2016. *HIV/AIDS surveillance in Europe 2015*. Stockholm: ECDC.

European Union, 2014. Official Journal of the European Union, L 161. *Legislation*, 57. Available online: <http://eur-lex.europa.eu/legal-content/en/ALL/?uri=OJ:L:2014:161:TOC> [Accessed 24-04-2018].

Evans, D.B., Hsu, J. and Boerma, T., 2013. Universal health coverage and universal access. *Bulletin of the World Health Organization*, 91, pp.546-546A. Available at: <http://www.who.int/bulletin/volumes/91/8/13-125450/en/> [Accessed 15-09-2017].

Fishbein, M. and Ajzen, I., 1975. *Belief, Attitude, Intention, and Behavior: An Introduction to Theory and Research*. Reading, MA: Addison-Wesley. Available at: <http://people.umass.edu/ajzen/f&a1975.html> [Accessed 14-09-2017].

Fonner, V.A, Armstrong, K.S., Kennedy, C.E., O'Reilly, K.R. and Sweat, M.D., 2014. School Based Sex Education and HIV Prevention in Low- and Middle-Income Countries: A Systematic Review and Meta-Analysis. *PLoS ONE*, 9(3): e89692.

Freimuth, V.S., 1992. Theoretical foundations of AIDS media campaigns. In: T. Edgar, M.A. Fitzpatrick and V.S. Freimuth, eds., *AIDS: A communication perspective*. Hillsdale, NJ: Erlbaum. pp.91-110.

German Development Cooperation (GIZ) GmbH, 2018. *HIV/AIDS advisory services and institutional capacity building*. [online] Available at: <https://www.giz.de/en/worldwide/21306.html> [Accessed 04-05-2018].

German Development Cooperation (GIZ) GmbH, 2016. *Where can I get tested for HIV/AIDS?* [online] Available at: <http://aidsfacts.helpme.com.ua/en/topic/test-map> [Accessed 13 March 2018].

The Global Fund to Fight AIDS, Tuberculosis and Malaria (Global Fund), 2018. *Women & Girls*. [online] Available at: <https://www.theglobalfund.org/en/women-girls/> [Accessed 07-03-2018].

The Global Fund to Fight AIDS, Tuberculosis and Malaria (Global Fund), 2016a. *The Global Fund Strategy 2017-2022: Investing to End Epidemics*. GF/B35/02 – Revision 1. 35th Board Meeting 26-27 April 2016. [pdf] Abidjan: The Global Fund. Available at: https://www.theglobalfund.org/media/1176/bm35_02-theglobalfundstrategy2017-2022investingtoendepidemics_report_en.pdf [Accessed 01-05-2018].

The Global Fund to Fight AIDS, Tuberculosis and Malaria (Global Fund), 2016b. *Technical Brief: Adolescent Girls and Young Women*. [pdf] Geneva: The Global Fund. Available at: https://www.theglobalfund.org/media/4576/core_adolescentgirlsandyoungwomen_technicalbrief_en.pdf [Accessed 12-09-2017].

Health Strategic Advisory Group (Health SAG), ca. 2014. *National Health Reform Strategy for Ukraine 2015-2020*. [pdf] Health Strategic Advisory Group. Available at:

http://healthsag.org.ua/wp-content/uploads/2015/03/Strategiya_Engl_for_inet.pdf [Accessed 04-05-2018].

Janz, N.C., Zimmerman, M.A., Wren, P.A., Israel, B.A., Freudenberg, N. and Carter, R.J., 1996. Evaluation of 37 AIDS prevention projects: Successful approaches and barriers to program effectiveness. *Health Education Quarterly*, 23(1), pp.80-97.

Jaworsky, D., Gardner, S., Thorne, J.G., Sharma, M., McNaughton, N., Paddock, S., Chew, D., Tutsirai Makuwaza, R.L., Wagner, A., Rachlis, A. and CHIME Research Group, 2016. The role of people living with HIV as patient instructors – reducing stigma and improving interest around HIV care among medical students. *AIDS Care*, [e-journal] 29(4), pp.524-531. <http://dx.doi.org/10.1080/09540121.2016.1224314>.

Joint United Nations Programme on HIV/AIDS (UNAIDS), 2018a. *Country, Ukraine*. [online] Available at: <http://www.unaids.org/en/regionscountries/countries/ukraine> [Accessed 23-04-2018].

Joint United Nations Programme on HIV/AIDS (UNAIDS), 2018b. *Country, Ukraine, Results, Challenges*. [online] Available at: <http://www.unaids.org/en/regionscountries/countries/ukraine> [Accessed 23-04-2018].

Joint United Nations Programme on HIV/AIDS (UNAIDS), 2018c. *About*. [online] Available at: <http://www.unaids.org/en/whoweare/about> [Accessed 23-04-2018].

Joint United Nations Programme on HIV/AIDS (UNAIDS), 2017a. *UNAIDS Data 2017*. [online] Available at: http://www.unaids.org/en/resources/documents/2017/2017_data_book [Accessed 23-04-2018].

Joint United Nations Programme on HIV/AIDS (UNAIDS) 2017b. *AIDSinfo, Maps, People living with HIV (all ages)*. [online] Available at: <http://aidsinfo.unaids.org/> [Accessed 11-09-2017].

Joint United Nations Programme on HIV/AIDS (UNAIDS), 2017c. *Ending AIDS. Progress Towards the 90-90-90 Targets*. Global AIDS Update 2017. [pdf] Available at: http://www.unaids.org/sites/default/files/media_asset/Global_AIDS_update_2017_en.pdf [Accessed 12-04-2018].

Joint United Nations Programme on HIV/AIDS (UNAIDS), 2017d. *Global AIDS Monitoring 2018*. Geneva, Switzerland: UNAIDS.

Joint United Nations Programme on HIV/AIDS (UNAIDS), 2017e. *AIDSinfo. Graphs, National: Ukraine, People living with HIV (all ages)*. [online] Available at: <http://aidsinfo.unaids.org/> [Accessed 10-04-2018].

Joint United Nations Programme on HIV/AIDS (UNAIDS), 2017f. *AIDSinfo. Graphs, Global, New HIV infections (all ages)*. [online] Available at: <http://aidsinfo.unaids.org/> [Accessed 10-04-2018].

Joint United Nations Programme on HIV/AIDS (UNAIDS) 2017g. *AIDSinfo, Graphs, People living with HIV (all ages)*. [online] Available at: <http://aidsinfo.unaids.org/> [Accessed 11-09-2017].

Joint United Nations Programme on HIV/AIDS (UNAIDS), 2017h. *AIDSinfo. Graphs, Global, People living with HIV (all ages)*. [online] Available at: <http://aidsinfo.unaids.org/> [Accessed 10-04-2018].

Joint United Nations Programme on HIV/AIDS (UNAIDS), 2016a. *Global AIDS Response Progress Reporting*. Geneva, Switzerland: UNAIDS.

Joint United Nations Programme on HIV/AIDS (UNAIDS), ca. 2016b. *AIDSinfo. Factsheets. Country Factsheets. Ukraine 2016*. [online] Available at: <http://aidsinfo.unaids.org/> [Accessed 01-05-2018].

Joint United Nations Programme on HIV/AIDS (UNAIDS), 2015. *UNAIDS Strategy 2016-2021*. Geneva, Switzerland: UNAIDS. Available at: http://www.unaids.org/en/resources/documents/2015/UNAIDS_PCB37_15-18 [Accessed 11-09-2017].

Joint United Nations Programme on HIV/AIDS (UNAIDS), 2014b. *Adolescent Girls and Young Women*. [online] Available at: <http://www.unaids.org/en/resources/documents/2014/Adolescentgirlsandyoungwomen> [Accessed 10-09-2017].

LaCroix, J.M., Snyder, L.B., Huedo-Medina, T.B. and Johnson, B.T., 2014. Effectiveness of Mass Media Interventions for HIV Prevention, 1986-2013: A Meta-analysis. *Journal of Acquired Immune Deficiency Syndrome*, 66(Suppl.3), pp.S329-S340.

Lekhan, V.N., Rudy, V.M., Shevchenko, M.V., Nitzan Kaluski, D., Richardson, E., 2015. Ukraine: Health system review. *Health Systems in Transition*, 17(2), pp.1-153.

Lupton, D., 1994. *Medicine as culture: Illness, disease and the body in Western societies*. London: Sage Publications.

Malinowska-Sempruch, K., Bonnell, R. and Hoover, J., 2006. Civil society - a leader in HIV prevention and tobacco control. *Drug and Alcohol Review*, 25(6), pp.625-632.

Malta, M., Ralil da Costa, M. and Bastos, F.I., 2014. The Paradigm of Universal Access to HIV-Treatment and Human Rights Violation: How Do We Treat HIV-Positive People Who Use Drugs? *Current HIV/AIDS Reports*, 11(1), pp.52-62.

Mann, J.M., 1989. AIDS: A worldwide pandemic. In: M.S. Gottlieb, D.J. Jeffries, D. Mildvan, A.J. Pinching, T.C. Quinn and R.A. Weiss, eds., 1990. *Current Topics in AIDS: Volume 2*. Hoboken, NJ: John Wiley & Sons.

Medwiser, ca. 2011. *AIDS in Ukraine*. [online] Available at: <http://www.medwiser.org/hiv-aids/around-the-world/aids-in-ukraine/> [Accessed 23-04-2018].

Michal-Johnson, P. and Bowen, S.P., 1992. The place of culture in HIV education. In: T. Edgar, M.A. Fitzpatrick, & V.S. Freimuth, eds., *AIDS: A communication perspective*. Hillsdale, NJ: Erlbaum. pp.147-172.

Ministry of Healthcare of the Russian Federation, 2016. *Approving the State Strategy to Combat the Spread of HIV in Russia through 2020 and beyond*. [online] Available at: <http://government.ru/en/docs/24983/> [Accessed 06-05-2018].

Nachega, J.B., Uthman, O.A., del Rio, C., Mugavero, M.J., Rees, H. and Mills, E.J., 2014. Addressing the Achilles' Heel in the HIV Care Continuum for the Success of a Test-and-Treat Strategy to Achieve an AIDS-Free Generation. *Clinical Infectious Diseases*, 59(Suppl.1), pp.S21-S27.

Naing, C., Mak, J.W., Maun, M., Wong, S.F., Kassim, A., 2013. Meta-analysis: the association between HIV infection and extrapulmonary tuberculosis. *Lung*, 191(1), pp.27-34.

Nikolopoulos, G.K., Kostaki, E.-G. and Paraskevis, D., 2016. Overview of HIV molecular epidemiology among people who inject drugs in Europe and Asia. *Infection, Genetics and Evolution*, 46, pp.256-268.

Nutbeam, D., 2000. Health literacy as a public health goal: a challenge for contemporary health education and communication strategies into the 21st century. *Health Promotion International*, 15(3), pp.259-267.

Owczarak, J., Filippova, O. and Phillips, S.D., 2014. A novel bottom-up approach to promote evidence-based HIV prevention for people who inject drugs in Ukraine: protocol for the MICT ('Bridge') HIV prevention exchange project. *Implementation Science*, 9(18), [online] Available at: <https://implementationscience.biomedcentral.com/articles/10.1186/1748-5908-9-18>. [Accessed 14-09-2017].

Parker, R.M., 2000. Health literacy: a challenge for american patients and their health care providers. *Health Promotion International*, 15(4), pp.277-291.

Pechansky, R. and Thomas, T.W., 1981. The Concept of Access: Definition and Relationship to Consumer Satisfaction. *Medical Care*, 19(2), pp. 127-140.

Promundo, UNFPA and MenEngage, 2010. *Engaging Men and Boys in Gender Equality and Health: A Global Toolkit for Action*. [online] Available at: <http://promundoglobal.org/resources/engaging-men-and-boys-in-gender-equality-and-health-a-global-toolkit-for-action/> [Accessed 15-09-2017].

Public Health Centre of the Ministry of Health of Ukraine (PHC) 2017. *The epidemic situation with HIV in Ukraine as of 1.11.2017* [Епідемічна ситуація з ВІЛ-інфекції в Україні станом на 01.11.2017]. [pdf] Available at: <https://phc.org.ua/uploads/documents/83da57/4c9b4b10f90286fdea34b0cfe8e7cdbc.pdf> [Accessed 18-02-2018].

Rogers, E.M., 1995. *Diffusion of innovations*. 4th ed. New York: Free Press.

Rogers, E.M., 1983. *Diffusion of innovations*. 3rd ed. New York: Free Press.

Salam, R.A., Faqqah, A., Sajjad, N., Lassi, Z.S., Das, J.K., Kaufman, M. and Bhutta, Z.A., 2016. Improving Adolescent Sexual and Reproductive Health: A Systematic Review of Potential Interventions. *Journal of Adolescent Health*, 59(Suppl.4), pp.S11-S28.

Schoepf, B.G., 1991. Ethical, methodological and political issues of AIDS research in Central Africa. *Social Science & Medicine*, 33(7), pp.749-763.

Seidel, G., 1993. The competing discourse of HIV/AIDS in Sub-Saharan Africa: Discourses of rights and empowerment vs discourses of control and exclusion. *Social Science & Medicine*, 36(3), pp.175-194.

Sibanda, E.L., Tumushime, M., Mufuka, J., Mavedzenge, S.N., Gudukeya, S., Bautista-Arredondo, S., Hatzold, K., Thirumurthy, H., McCay, S.I., Padian, N., Copas, A. and Cowan, F.M., 2017. Effect of non-monetary incentives on uptake of couples' counselling and testing among clients attending mobile HIV services in rural Zimbabwe: a cluster-randomised trial. *Lancet Global Health*, 5(9), e907-e915.

Stover, J., Hallett, T.B., Wu, Z., Warren, M., Gopalappa, C., Pretorius, C., Ghys, P.D., Montaner, J. and Schwartzlaender, B. 2014. How Can We Get Close to Zero? The Potential Contribution of Biomedical Prevention and the Investment Framework towards an Effective Response to HIV. *PLoS ONE*, 9(11): e111956.

Thomson, K.A., Hughes, J.P., Baeten, J., John-Stewart, G., Celum, C.L., Cohen, C.R., Mugo, N.R., Kiarie, J. and Heffron, R., 2018. Female HIV acquisition per sex act is elevated in late pregnancy and postpartum. *25th Conference on Retroviruses and Opportunistic Infections (CROI 2018)*, Boston, abstract 45.

Townsend, L., Mathews, C. and Zembe, Z., 2013. A Systematic Review of Behavioral Interventions to Prevent HIV Infection and Transmission among Heterosexual, Adult Men in Low- and Middle-Income Countries. *Prevention Science*, 14(1), pp.88-105.

Ukraine Crisis Media Center (UCMC), 2018. *What you need to know about the health reform in Ukraine* [Was man über die Gesundheitsreform in der Ukraine wissen muss]. [online] Available at: <http://uacrisis.org/de/60230-need-know-healthcare-reform-ukraine> [Accessed 30-04-2018].

United Nations, 2016. *Political Declaration on HIV and AIDS: On the Fast Track to Accelerating the Fight against HIV and to Ending the AIDS Epidemic by 2030*. Adopted by the General Assembly (A/70/L.52). [pdf] General Assembly 8 June 2016. Available at: http://www.unaids.org/sites/default/files/media_asset/2016-political-declaration-HIV-AIDS_en.pdf [Accessed 01-05-2018].

UNESCO Institute of Statistics 2017. *Ukraine. Education and Literacy. Participation in Education*. [online] Available at: <http://uis.unesco.org/country/UA> [Accessed 04 December 2017].

United Nations, Department of Economic and Social Affairs, Population Division, UN DESA, 2017. *World Population Prospects: The 2017 Revision*. Custom data acquired via website. [online] Available at: <https://esa.un.org/unpd/wpp/DataQuery/> [Accessed 30-04-2018].

United Nations Development Programme, UNDP, 2016. *Human Development Report 2016. Human Development for Everyone*. New York: United Nations Development Programme.

United Nations Development Programme, UNDP, 2015. *HIV, law, human rights and gender equality*. [online] Available at: <http://www.undp-globalfund-capacitydevelopment.org/en/critical-enablers/links-between-human-rights-gender-equality-legal-and-policy-frameworks/hiv-law-human-rights-and-gender-equality/> [Accessed 10-09-2017].

United Nations Development Programme, UNDP, n.d. *Frequently Asked Questions – Gender Inequality Index (GII)*. [online] Available at: <http://hdr.undp.org/en/faq-page/gender-inequality-index-gii#t294n2422> [Accessed 30-04-2018].

UNHCR, 2018. *Operational Update, 01-28 February 2018*. [pdf] UNHCR. Available at: <http://reporting.unhcr.org/sites/default/files/UNHCR%20Ukraine%20Operational%20Update%20-%20February%202018.pdf> [Accessed 30-04-2018].

UNICEF Ukraine, ca. 2014. *HIV/AIDS Children and Youth Programme*. [online] Available at: https://www.unicef.org/ukraine/activities_11384.html [Accessed 10 October 2017].

United Nations Ukraine, ca. 2015. *Gender Equality*. [online] Available at: <http://www.un.org.ua/en/resident-coordinator-system/gender-equality> [Accessed 10 October 2017].

United Nations Statistics Division, 2017. *Global indicator framework for the Sustainable Development Goals and targets of the 2030 Agenda for Sustainable Development*. Adopted by the General Assembly (A/RES/71/313). [online] New York: United Nations Statistics Division. Available at: <https://unstats.un.org/sdgs/indicators/indicators-list/> [Accessed 15-04-2018].

University of Oxford, 2018. *War in Ukraine has escalated HIV spread in the country*. [online] Available at: <http://www.ox.ac.uk/news/2018-01-16-war-ukraine-has-escalated-hiv-spread-country#> [Accessed 30-04-2018].

U.S. Department of Health & Human Services, n.d. *A Timeline of HIV and AIDS*. [online] Available at: <https://www.hiv.gov/hiv-basics/overview/history/hiv-and-aids-timeline> [Accessed 01-05-2018].

Vandormael, A., Akullian, A.N., Dobra, A., de Oliveira, T. and Tanser F., 2018. Sharp decline in male HIV incidence in a rural South African population (2004–2015). *Conference on Retroviruses and Opportunistic Infections*, Boston, abstract 46.

Wolf, M.S., Feinglass, J., Thompson, J. and Baker, D.W., 2010. In search of 'low health literacy': Threshold vs. gradient effect of literacy on health status and mortality. *Social Science and Medicine*, 70(9), pp.1335-1341.

Woog, V. and Kågesten, A., 2017. *The Sexual and Reproductive Health Needs of Very Young Adolescents Aged 10–14 in Developing Countries: What Does the Evidence Show?* [pdf] New York: Guttmacher Institute. Available at: <https://www.guttmacher.org/report/srh-needs-very-young-adolescents-in-developing-countries> [Accessed 01-05-2018].

The World Bank Group, 2018. *Data. Lower middle income*. [online] Available at: <https://data.worldbank.org/income-level/lower-middle-income> [Accessed 30-04-2018].

World Health Organization (WHO), 2018a. *Humanitarian Health Action. Definitions: emergencies*. [online] Available at: <http://www.who.int/hac/about/definitions/en/> [Accessed 04-05-2018].

World Health Organization (WHO), 2018b. *HIV/AIDS. Treatment and care*. [online] Available at: <http://www.who.int/hiv/topics/treatment/en/> [Accessed 30-04-2018].

World Health Organization (WHO), 2018d. *HIV/AIDS. HIV and hepatitis coinfections*. [online] Available at: <http://www.who.int/hiv/topics/hepatitis/en/> [Accessed 24-04-2018].

World Health Organization (WHO) 2017a. *HIV/AIDS*. [online] Available at: <http://www.who.int/features/qa/71/en/> [Accessed 14-04-18].

World Health Organization (WHO) 2017b. *Global Tuberculosis Report 2017*. Geneva: World Health Organization.

World Health Organization (WHO), 2016a. *Global health sector strategy on HIV 2016–2021: towards ending AIDS*. Geneva: World Health Organization.

World Health Organization (WHO), 2016b. *World Health Statistics, Monitoring Health for the SDGs*. Geneva: World Health Organization.

World Health Organization (WHO), 2014. *Health for the world's adolescents*. Geneva: World Health Organization.

World Health Organization (WHO), 2013. *Consolidated guidelines on the use of antiretroviral drugs for treating and preventing HIV infection: recommendations for a public health approach*. Geneva: World Health Organization.

World Health Organization (WHO), 2010. *Revised HIV Law in Ukraine*. [online] Available at: <http://www.euro.who.int/en/health-topics/communicable-diseases/hiv-aids/news/news/2010/11/revised-hiv-law-in-ukraine> [Accessed 24-04-2018].

WHO Commission on the Social Determinants of Health, 2008. *Social determinants of health: Key concepts*. [online] Available at: http://www.who.int/social_determinants/thecommission/finalreport/key_concepts/en/ [Accessed 15-09-2017].

WHO Commission on the Social Determinants of Health, 2007. *Achieving health equity: From root causes to fair outcomes*. Geneva: World Health Organisation. Available at: http://www.who.int/social_determinants/resources/interim_statement/en/index.html [Accessed 11-09-2017].

WHO Regional Office for Europe, 2016. *Action plan for the health sector response to HIV in the WHO European Region*. EUR/RC66/9 working document. Copenhagen: WHO Regional Office for Europe.

Yoder, P.S., 1997. Negotiating relevance: Belief, knowledge, and practice in international health projects. *Medical Anthropology Quarterly*, 11(2), pp.131-146.

Yoder, P.S., Hornik, R. and Chirwa, B.C., 1996. Evaluating the program effects of a radio drama about AIDS in Zambia. *Studies in Family Planning*, 27(4), pp.188-203.

9) Appendix

9.1) Appendix 1

Project/organisation's name	Main approach
<i>AHF</i>	Free testing for HIV
<i>AIDS Foundation East West</i>	Regional exchanges and building capacity of local governmental and non-governmental service providers
<i>All-Ukrainian Network of People Living with HIV</i>	Advocacy efforts to increase access to ARVs in Ukraine; development of programmes for diagnosis and treatment of HIV infection; expansion of HIV prevention programmes; improving tolerance towards PLHIV
<i>Center for Spiritual and Psychosocial Support</i>	Support for PLHIV, collaborating with other centres
<i>Charitable Foundation "Light of Hope"</i>	Provision of comprehensive professional assistance to clients, i.e. Poltava Regional Center for Prevention of HIV and AIDS; adherence to ART
<i>Elena Pinchuk Foundation</i>	Supporting PLHIV, education and attracting external partners to Ukraine
<i>Friendly Doctor</i>	Anonymous consultations and testing for HIV
<i>Gender Z</i>	Observation of human rights situation for PLHIV, LGBTQI community; activities bringing together different societal groups for exchange and increasing tolerance
<i>German Development Cooperation (GIZ) GmbH</i>	Awareness raising campaign, educational programme, technical support, training of doctors and network building
<i>The Global Fund to Fight AIDS, Tuberculosis and Malaria</i>	Provision of funds to support HIV treatment along with anti-corruption measures
<i>International Charitable Foundation Vertikal</i>	Awareness raising about HIV/AIDS being an epidemic; supporting PLHIV; improving access to medicines

Project/organisation's name	Main approach
<i>Odessa Charity Fund The Way Home</i>	Technical support and consultancy to other organisations, network building
<i>UNAIDS</i>	Support of Ukraine to fight the HIV epidemic by providing resources, guidance and raising awareness
UNICEF	Supporting the Ukrainian government by strengthening the national policy response and ensuring that the rights of children and women living with HIV are respected; development of health services tailored to the youth; in school awareness raising; capacity strengthening of healthcare facilities; ART advocacy for women and children
<i>World Health Organization Regional Office for Europe</i>	Data surveillance, country profiles, awareness raising

Table 4: Main national and international HIV prevention projects/programmes in Ukraine

9.2) Appendix 2

Years	2014 to 2017
Method	Personal structured interview
Sample design	Based on data from the Ukrainian State Statistics Service prior the year of release (e.g. year 2016 for dataset 2017).
Sample selection	<ol style="list-style-type: none"> 1. Stratified first over the 25 administrative units (under governmental control¹¹); 2. Interviews were proportionally distributed according to the size of settlement (except Kiev and other large cities). Settlements were grouped after: rural area; towns with a population < 50,000; towns with a population of 51,000-100,000; towns with a population of 101,000-500,000; cities with population > 500,000. All Ukrainian settlements with population > 200,000 were included in the sample; smaller settlements were randomly selected from an alphabetically ordered list; 3. For Kyiv and other large cities, the sample was then stratified by administrative districts; 4. Routes were selected randomly. Each interviewer received instructions with rules for selecting a starting point for the route and defining skip intervals for selecting the following addresses; 5. At the last stage interview was conducted with the person who fits by age (15+). If there are several persons who fit by age, the interview was conducted with the person whose birthday was the last among members of household aged 15+. If all potential respondents refused to participate in the survey, the interviewer attempted an interview at the next household.

Table 5: Overview: Quantitative data collection process according to GfK research group.

Based on: Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH, 2015, 2016, 2017, 2018.

¹¹ Non-governmental controlled areas were: Crimea and eastern regions of Donetsk and Luhansk.

9.3) Appendix 3

Indicator	Meaning of chosen variables
Knowledge	<p>(1) Is it possible to reduce the risk of HIV transmission by engaging in sexual intercourse only with a constant and faithful partner that does not have any other sexual partners? [Yes]</p> <p>(2) Is it possible to reduce the risk of HIV transmission by using condoms during each sexual intercourse? [Yes]</p> <p>(3) Is it a correct statement that a healthy looking person can be HIV-positive? [Yes]</p> <p>(4) Is transmission through a mosquito bite possible? [No]</p> <p>(5) Is it possible to contract HIV by sharing food with an HIV-positive person? [No]</p>
Condom use	<p>If <i>Have you ever had sexual intercourse</i> = [Yes]</p> <p>How often in the last year did you use condoms in the course of sexual intercourse?</p> <p>[Always], [Almost always]</p>
Testing	<p>Have you undergone an HIV test? [I undergo it regularly], [I did it a couple of times but not regularly], [I did it once]</p>
Attitudes towards PLHIV	<p>Answer = [No] or [Sometimes yes, sometimes no]</p> <p>(1) Is it okay for HIV-positive children to attend the same schools HIV-negative children go to?</p> <p>(2) Would you buy fresh vegetables from a salesman if you know he had HIV?</p>
Healthcare quality	<p>If <i>Have you ever undergone an HIV test</i> = [I undergo it regularly], [I did it a couple of times but not regularly], [I did it once]</p> <p>Were you satisfied with the quality of HIV testing procedure and consultation? [Yes], [Yes, but no consultation was proposed], [Partly yes, partly no]</p>

Table 6: Meaning of the different chosen variables.

The answers considered are shown in the [].

9.4) Appendix 4

Focus Group/Year	2014	2015	2016	2017
Females all	Knowledge; testing; tolerance: 784 Condom use: 669 Quality of healthcare: 301	Knowledge; testing; tolerance: 799 Condom use: 672 Quality of healthcare: 300	Knowledge; testing; tolerance: 940 Condom use: 802 Quality of healthcare: 361	Knowledge; testing tolerance: 1,189 Condom use: 935 Quality of healthcare: 482
Youth all	Knowledge; testing; tolerance: 411 Condom use: 262 Quality of healthcare: 136	Knowledge; testing; tolerance: 403 Condom use: 253 Quality of healthcare: 116	Knowledge; testing; tolerance: 446 Condom use: 295 Quality of healthcare: 128	Knowledge; testing; tolerance: 890 Condom use: 501 Quality of healthcare: 249
Female youth	Knowledge; testing; tolerance: 97 Condom use: 58 Quality of healthcare: 32	Knowledge; testing; tolerance: 97 Condom use: 62 Quality of healthcare: 27	Knowledge; testing; tolerance: 219 Condom use: 139 Quality of healthcare: 66	Knowledge; testing; tolerance: 391 Condom use: 246 Quality of healthcare: 128

Table 7: Change in N by focus group and year.

By fulfilling some conditions for an indicator, N resulted in a lower number.

9.5) Appendix 5

Interview No.:

Date:

Supplementary questions

Please fill out the following questions. In case you don't want to answer the question, you can just skip it.
Mandatory fields are marked with a *.

Please provide some personal information.

1. Name*

2. City*

3. What is your age?*

- 18 to 20 21 to 22 23 to 24 25 or older

4. What is your date of birth?

5. What is the highest degree or level of school you have completed?* (If you're currently enrolled in school, please indicate the highest degree you have received.)

- Less than Basic Secondary Education (БАЗОВА СЕРЕДНЯ ОСВІТА)
 Secondary education (ПОВНА СЕРЕДНЯ ОСВІТА)
 Vocational and technical education (ПРОФЕСІЙНО-ТЕХНІЧНА ОСВІТА)
 Junior bachelor/specialist (incomplete)
 Bachelor's degree (complete)
 Master's degree
 PhD/Doctorate
 Other, please specify

6. Please describe your current occupation. (If you are unemployed or looking for work please indicate.)

7. How many people currently live in your household?

8. What is your approximate average household income? (per month; in UAH)

- 3.999 and less 4.000 - 6.999 7.000 - 9.999
 10.000 - 12.999 13.000 - 15.999 16.000 and more
 No answer

On the next page I would like to ask you to answer three short questions concerning your love life.

- b) If no: Why?/What are the reasons? (abroad, not in the project region, project missed target group)

6. Through the information you have obtained; do you feel that you can talk more openly about the virus and do you know how to protect yourself?

7. Have you ever been to an AIDS Center or one of the hospitals/centres offering HIV tests, consultations? (*If not: name places in Kiev*)

Consider elaborating on this topic in case the participant answers "yes"; but: be aware about the sensitivity of information to be shared: à How was this experience: Counselling and services before and after the testing?

8. Have you ever done a test?

- a) If yes, do you remember where you have done a test?

Now I will ask you questions about access to healthcare services concerning HIV.

Availability:

1. All things considered how much confidence do you have in being able to get good HIV care (testing, consultation, treatment) for you and your family when you need it?
2. How satisfied are you with your availability to find a good doctor?
 - a) In your opinion, what characterises a good doctor? (Trust, service, experience, referral by a friend)
3. How satisfied are you with your knowledge of where to get healthcare for HIV?
4. How satisfied are you with your ability to get medical care in an emergency (unprotected sex with an HIV-positive person)? (*Participant may have to imagine this situation*)
5. Do you know if there is a need to make an appointment for seeking a consultation?

Accessibility:

6. How satisfied are you with the location of the physician's office for HIV care?
 - a) Is it easy to access it from university/work/home?
7. How difficult is it for you to get to your physician's office for HIV care?

(Please remember that I am only referring to HIV care.)

Accommodation:

8. (*If applicable*) How satisfied are you with waiting time to get an appointment for an HIV consultation?
9. How satisfied are you with how convenient the physician's office hours are?
10. (*If applicable*) How comfortable do you feel spending time in the physician's office/waiting room?
 - a) Do you feel any pressure or discomfort?
11. (*If applicable*) How satisfied are you with how easy it is to get in touch with your physician?

Affordability:

12. How satisfied are you with the prices for HIV testing, consultation, treatment? (*interviewee should answer that testing/treatment is for free*)
13. (*If applicable*) Did you ever have to pay for testing or consultation for HIV?
14. Have you heard of someone who had to pay for getting tested or consulted for HIV?

Acceptability:

(even though the participant may not have been to a consultation regarding HIV, s/he may know the premises)

15. How satisfied are you with the appearance of the doctor's office where you can receive HIV care?
16. How satisfied are you with the neighbourhood the office for HIV care is in?
17. How satisfied are you with the other patients you see at the doctor's office for HIV care?

Additional questions:

1. Do you have a partner? Did you discuss HIV with him/her?

(Thank the individual for participating in this interview. Assure her of confidentiality of responses and that she can contact me for any further questions.)

Figure 13: Interview guide

9.7) Appendix 7

Consent form

“Access to information on and healthcare about HIV in Kiev: A mixed-method study”

Dear Participant,

Please consider the following information which is provided for you so you can decide whether you wish to participate in the interviews. You should be aware of your right to withdraw at any time during the study as well as to completely refrain from your participation without facing any consequences.

The study’s purpose is to understand how females obtain information on HIV as well as to understand their perception of testing, consultation and treatment options in regards to the autoimmune disease (HIV).

The information you provide will feed into a ‘bigger picture’ of other statistical data. You are therefore providing very valuable real life information for looking at the effectiveness of HIV prevention programmes.

Please do not hesitate to ask any questions which can be done during, before or after the interview. After the completion of the research, I would be happy to share the results with you in case you are interested. You should be assured that your name will not be associated with any of the research findings. Also, your personal identity will only be known to the researcher and (possibly) the translator/research assistant.

There are no known risks involved in this interview. I expect to learn from your experience and also to improve my general qualitative data collection skills.

Please sign this form agreeing that you are aware of the purpose of the interview as well as the study’s overall aim.

Signature of Participant

Date

Sonja C. M. Bloch, MSc. Student at Lund University, Sweden – International Development and Management.

Figure 14: Consent form

9.8) Appendix 8

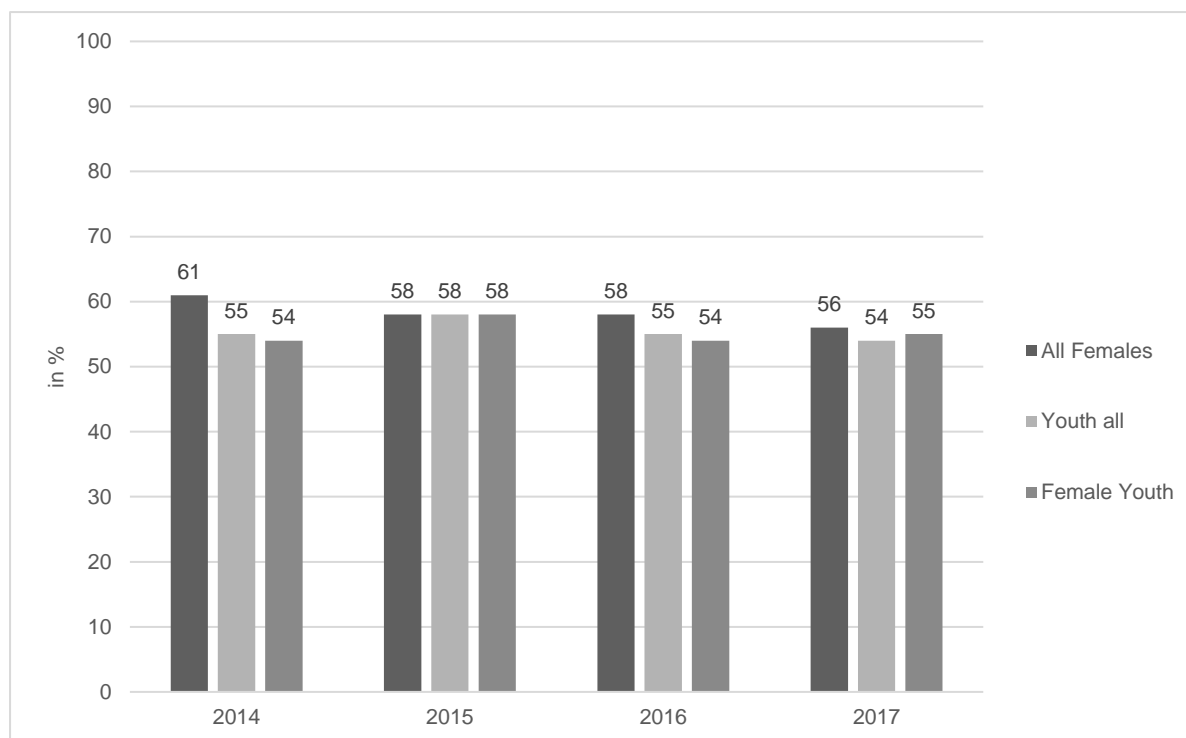


Figure 15: Discriminatory behaviour of Ukrainian females, youth and female youth 2014 to 2017.
Values were rounded.

9.9) Appendix 9

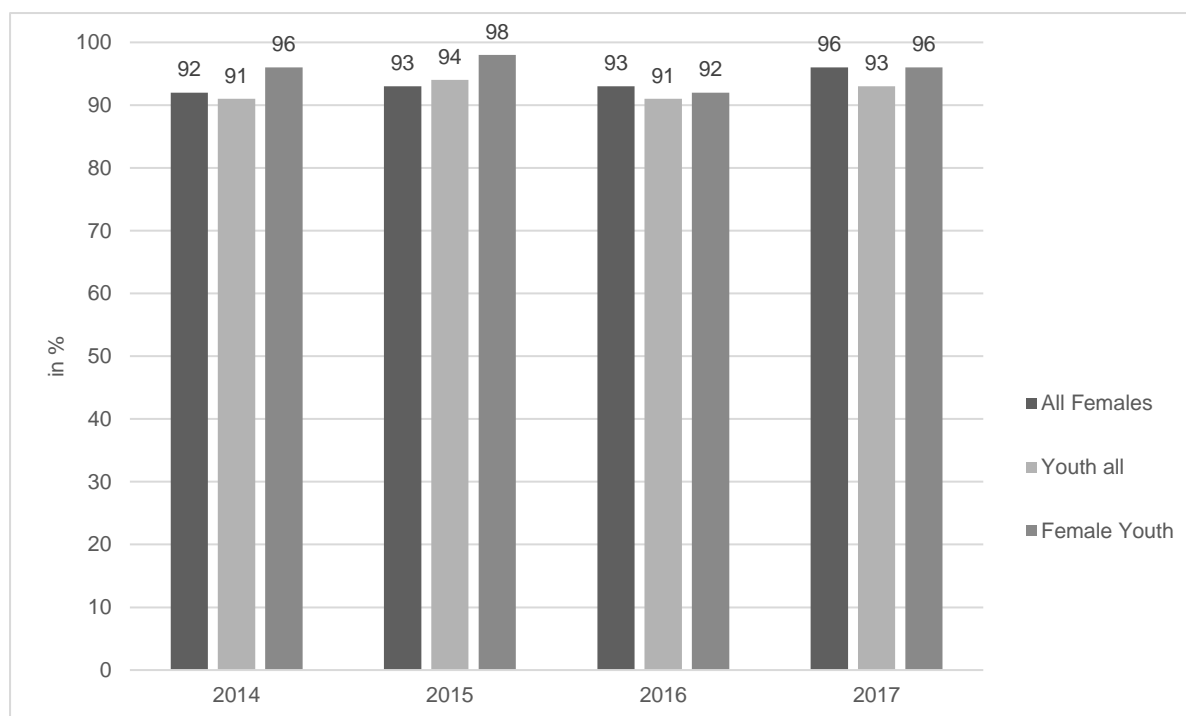


Figure 16: HIV-healthcare satisfaction of Ukrainian females, youth and female youth 2014 to 2017.
Values were rounded.

9.10) Appendix 10

Variable/Dataset	Quantitative results	Qualitative findings ¹	Theoretical perspectives and literature review ²	Potential explanation
Knowledge of HIV	↑	↑	Theory: Low health literacy = low health outcomes (Parker 2000) Best: Comprehensive sex education & community involvement (Fonner et al. 2014); Sexual education & health services tailored to adolescents' needs (Cole et al. 2013; Elliot et al. 2013; Salam et al. 2016)	Efforts in educational institutions, public events & mass communication.
Condom use	✘	✘	Best: Focus on condom use (Townsend, Mathews & Zembe 2013); Contraceptive provision & education in schools (Salam et al. 2016)	Ukrainians seem to have a distance to HIV & do not recognise the severity of the HIV situation in the country (Freimuth 1992:101; Airhihenbuwa & Oregon 2000).
Being tested for HIV	✘	✘	Studies with a focus on prevention, which increase testing have not been found in this literature research	
Discriminatory behaviour	✘	↑	Reduce health personnel's stigma towards PLHIV through education & structural changes (Brinsdon, Abel & Desrosiers 2016; Jaworsky et al. 2016)	Potential distance to people living with HIV results in pre-judices. Interview participants do not know any HIV positive persons and may have been influenced by the interview situation.
Quality of HIV healthcare services	↑	↓ ³	Health services tailored to adolescents' needs & sex education (Cole et al. 2013; Elliot et al. 2013; Salam et al. 2016) Overall low health system quality	Joint-efforts of Government, national & international organisations to ensure universal access; Interview participants only referred to the general health system.

Table 9: Influence of HIV Prevention Projects on adolescent girls and young women in Ukraine.

All results should be viewed in context with the position of women in Ukraine and overall Ukrainian health system, ongoing conflict and recession.

¹ The findings only show tendencies and potentially underlying reasons.

² Referring to the influence of HIV prevention projects in general.

³ Participants could only give insights into the overall healthcare situation.

↑ High influence

↓ Low influence

✘ No influence

9.11) Appendix 11

Variable	Answer	Gender		Total
		Male	Female	
Did you ever get tested for HIV?	(1) I undergo it regularly	47	70	117
	(2) I did it a couple of times but not regularly	154	202	356
	(3) I did it once	161	212	373
	(4) I did not do it	643	635	1278
	(5) I would rather not answer	66	70	136
Total		1071	1189	2260

Table 8: 2017: Testing of males vs. females in Ukraine (answer 1-3).