Cost analysis of Harm Reduction Community Meetings for IDUs in Bandung, Indonesia

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BACKGROUND: The HIV epidemic shows an increasing trend in Indonesia. The HIV prevalence is mainly high among risk groups, like injecting drug users (IDUs). The major risk factor among IDUs is the use of contaminated needles. Harm reduction community meetings for IDUs aim to reduce the HIV epidemic by increasing knowledge about the effect of drug use and HIV. Cost data are required to allow policy makers to make evidence-based decisions about prioritizing HIV interventions. However, no data on the costs of harm reduction community meetings are known in Indonesia.

OBJECTIVE: To assess the societal costs of harm reduction community meetings for IDUs in Bandung, Indonesia in 2016.

METHODS: The societal costs of harm reduction community meetings were collected in April and May 2017 and calculated for Bandung, Indonesia, over one year period. The health care costs were collected by interviewing relevant stakeholders using a micro-costing approach. Non-health care costs were estimated on the basis of a survey among 23 IDUs.

RESULTS: A total number of 133 harm reduction community meetings were conducted in 2016. Annual societal costs of the community meetings were US$ 48,618.31, or US$ 365.55 per community meeting. Transportation fee for visitors (30.8%) constituted the largest cost item, followed by personnel costs (27.8%) and non-health care costs (21.5%).

CONCLUSION: The societal costs of the harm reduction community meetings seem high. However, transportation fee for the visitors offers potential for cost-savings as it turns out to be the largest cost item.

Key words: Cost analysis, Injecting Drug Users, Harm Reduction Community Meeting, HIV/AIDS, priority setting, Indonesia.
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<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>WHO</td>
<td>World Health Organization</td>
</tr>
<tr>
<td>KAP</td>
<td>Key Affected Population</td>
</tr>
<tr>
<td>FSW</td>
<td>Female sex worker</td>
</tr>
<tr>
<td>MSM</td>
<td>Men who have sex with men</td>
</tr>
<tr>
<td>IDU</td>
<td>Injecting drug user</td>
</tr>
<tr>
<td>NAC</td>
<td>National AIDS Commission</td>
</tr>
<tr>
<td>NASAP</td>
<td>National AIDS Strategy and Action Plan</td>
</tr>
<tr>
<td>VCT</td>
<td>Voluntary Counselling and Testing</td>
</tr>
<tr>
<td>NSP</td>
<td>Needle and Syringe Program</td>
</tr>
<tr>
<td>MMT</td>
<td>Methadone Maintenance Treatment</td>
</tr>
<tr>
<td>MCDA</td>
<td>Multi-criteria decision analysis</td>
</tr>
<tr>
<td>REVISE</td>
<td>REthinking the Valuation of Interventions to improve priority SEtting</td>
</tr>
<tr>
<td>NICHE</td>
<td>Nijmegen International Center for Health systems research and Education</td>
</tr>
<tr>
<td>NGO</td>
<td>Non-governmental organisation</td>
</tr>
</tbody>
</table>
1. Background

1.1 Indonesia’s HIV/AIDS epidemic

In 2015, the World Health Organization (WHO) acknowledged that 36.7 million people worldwide were living with HIV. In the same year, 1.1 million people died from AIDS globally (1).

Several HIV prevention strategies have already reduced the HIV epidemic to a large extent in South East Asia. Indonesia, however, is one of the countries in which the epidemic is still growing. Indonesia has the fourth largest population in the world with approximately 260 million inhabitants which are distributed over approximately 17,000 islands (2, 3). The Indonesian HIV incidence is increasing annually; a total of 73,000 new cases of HIV infections were reported in 2015, compared to 69,000 new cases in 2010. This increase has resulted in an estimated number of 690,000 Indonesian people living with HIV in 2015 (4).

Although the HIV prevalence is only 0.3% among the total Indonesian population, the HIV prevalence is very high among key affected populations (KAPs), including female sex workers (FSW), men who have sex with men (MSM), and injecting drug users (IDUs). The HIV prevalence among these KAPs is 5.3% among FSW, 25.8% among MSM, and 28.8% among IDUs (5).

Besides the diverse HIV prevalence among KAPs, the HIV prevalence varies between different districts and provinces. The highest numbers of people living with HIV were found in the provinces of Papua, West Papua, and DKI Jakarta (6).

1.2 Indonesian response to the HIV/AIDS epidemic

The Indonesian response to HIV and AIDS has been led and coordinated by the National AIDS Commission (NAC) and other multi-sectoral commissions, which are established at national, provincial, and district levels of the decentralized government system. The NAC Board is chaired by the Coordinating Minister for People’s Welfare (6). One of the responsibilities of NAC is the development of the National AIDS Strategy and Action Plan (NASAP), which is a tool that serves as reference for the decentralized government system to develop more AIDS prevention related strategies (7). The most recent NASAP (2015-2019) outlines a few major aims, including HIV prevention. Other objectives of the NASAP are to improve quality of treatment and services, to mitigate the impact of the epidemic, and to create an enabling environment that promotes the prevention and reduction of the burden of HIV and AIDS (8). In addition, the strategy includes HIV prevention programs that are already implemented or which are in the course of implementation, such as Voluntary Counselling and Testing (VCT), antiretroviral treatment coverage, outreach services, community meetings, and sexual transmission programs. The HIV prevention programmes prioritise KAPs (FSW, MSM and IDUs) and geographical areas with the highest burden of disease (Papua, West Papua, and DKI Jakarta) (7).

1.3 Harm reduction community meetings for IDUs

Most of the people who inject drugs are male and the mean age is twenty-eight (9). Some communities are more vulnerable than others to drug abuse, namely the urban poor, street children, prisoners, sex workers, itinerant workers and communities in drug producing areas (10).

The HIV prevalence is 28.8% among IDUs. This high prevalence is due to the major risk of HIV transmission associated with the use of contaminated needles, and the common practices of unprotected sex (5, 11). In response to the HIV epidemic among IDUs, several harm reduction strategies have already been implemented in Indonesia, such as the Needle and Syringe Program (NSP) and the Methadone Maintenance Treatment (MMT) (11). NSP takes care of distribution of clean needles and syringes, which is highly effective in reducing transmission of HIV (12). MMT facilitate earlier access and better adherence to antiretroviral treatment among HIV infected IDUs, which results in a higher quality of life (13, 14).

However, the lack of knowledge about the effect of drug use and HIV might withhold drug users to access health services. Other causes that might cause the IDUs from not participating in the
HIV prevention programs are the stigmatization and illegitimacy of drug use. After all, the injection of drugs is stigmatized by the predominantly Muslim population in Indonesia with strong views on drug users, and the injection of drugs is illegal according to the Indonesian law (3, 11).

Harm reduction community meetings aim to reduce the impact of the HIV epidemic among IDUs by increasing the knowledge about the effect of drugs and HIV, by increasing the awareness to access health services, including NSP and MMT, by supporting the IDUs in behavioural change effort, and by sharing tips on how their productivity and quality of life could be improved.

1.4 Need for priority setting in HIV/AIDS control

While Indonesia has successfully scaled-up interventions for KAPs in the past years, the total resources required to control the HIV/AIDS epidemic are higher than the available budget. In 2014, US$ 208 million was needed to conduct the prevention strategies to effectively control the HIV epidemic. However, only US$ 79 million was spent on HIV/AIDS control, which leading to a resource gap of US$ 111 million (7, 15). Therefore, Indonesia needs to prioritize interventions to control the HIV epidemic. Multi-criteria decision analysis (MCDA) is a useful tool to allow policy makers to make evidence-based decisions about prioritizing several HIV interventions. In order to perform a MCDA, insight in the cost-effectiveness of HIV interventions is needed (16). Data on cost-effectiveness can only be acquired by reliable cost analyses and effectiveness measurements of HIV interventions. Cost analyses of many interventions have already been done in the recent past, but those are often based on rough estimations. It is therefore important to perform proper analysis on the costs of HIV prevention strategies.

1.5 Research question

No data on the costs of harm reduction community meetings are available in Indonesia. Cost analyses on HIV interventions for IDUs have only been done on needle and syringe programs and on hospital-based MMT (17, 18). This study primarily aims to determine the total costs of harm reduction community meetings for IDUs from societal perspective in Bandung, Indonesia, in 2016. In addition, a simple descriptive analysis is performed to obtain a rough picture of the effectiveness of the harm reduction community meetings.

This study is part of the REVISE 2020 research program (REthinking the Valuation of Interventions to improve priority SETting). This research program aims to reconsider the theory and tools for priority setting of health care interventions in low and middle income countries, and in the Netherlands. REVISE 2020 is coordinated by Nijmegen International Center for Health systems research and Education (NICHE) (19).

2. Methods

2.1 Study population and study setting

This study was conducted in Bandung, the capital of West Java province. Bandung is located at Indonesia’s most densely populated island, Java, and has approximately 2.6 million inhabitants (20). The top referral Hasan Sadikin hospital in Bandung has a HIV/AIDS clinic, which makes Bandung an important centre for HIV/AIDS control (21).

The cost analysis was done for one non-governmental organisation (NGO), called Grapiks. Grapiks was established in 2004 with the intention to reduce the harm of using drugs, including the aim to reduce the impact of HIV/AIDS, among IDUs. Grapiks has several programs to achieve the goal of reducing the impact of the HIV epidemic among IDUs, including harm reduction community meetings. Other programme are NSP, an outreach program, and VCT. Grapiks is funded solely by one donor institution and program funding is therefore coming from just one donor, namely Global Fund.

The harm reduction community meetings are frequent meetings in which knowledge about the effect of drug use is provided to IDUs. Two kind of harm reduction community meetings are organized monthly, the regular meeting and the MMT meeting. The duration of the regular meeting is around two hours and the meeting is organized in several puskesmas (community
health centres). During a regular harm reduction community meeting a group of 20 to 30 IDUs, mostly consisting of young men, participate. The other harm reduction community meeting is the MMT meeting, which is provided once a month to 20 MMT clients in the HIV/AIDS clinic of the Hasan Sadikin hospital. The duration of this MMT meeting is also two hours. During both meetings four staff members of Grapiks and one speaker representing the puskesmas or HIV/AIDS clinic are present. The speaker addresses various topics during the meetings, including HIV/AIDS, tuberculosis, hepatitis, legal issues of drug use, and sterilization of needles. Although every harm reduction community meeting has a specific main topic being discussed, HIV/AIDS education is always provided. The coordination and preparation of the harm reduction community meeting is conducted in two offices.

2.2 Cost data collection and analysis

Cost data were collected in April and May 2017 and extrapolated to one calendar year (January to December 2016). Cost data collection and analysis were based on the training manual from Creese and Parker (22). The cost analysis was performed from a societal perspective meaning both health care and non-health care costs needed to be measured. The costs were classified by input: costs were grouped on the basis of having similar characteristics. Additionally, the costs were grouped by the different funders of the harm reduction community meeting, including Global Fund, sponsors, and visitors.

Health care costs were defined as cost generated by usage of resources in the health care system, and were divided into capital costs and recurrent costs. The health care costs were estimated by interviewing the staff of Grapiks using a micro-costing approach (23). Informed consent was signed by Grapiks staff prior to being interviewed and a IDR 100,000 incentive was received in advance. For both capital and recurrent costs, shared allocation of cost items with other programs was estimated based on expert opinion and was taken into account in any further calculations.

Capital costs were defined as inputs that last for more than one year, including equipment and furniture costs. Equipment and furniture costs were estimated based on current market prices. When market prices were not available, the costs were estimated with the help of Grapiks personnel who were active in the harm reduction community meetings. The lifetime of the equipment and furniture was determined to be five years, which was generally accepted. The annual capital costs were measured on the basis of the lifetime of the capital goods with a discount rate of three per cent (23).

Recurrent costs were defined as the costs of resources which were purchased frequently and used up within the course of one year. The recurrent costs included: personnel, supplies, building, training, and transportation fee. Personnel costs were based on actual monthly personnel salaries obtained during interviews with personnel of Grapiks. Supply costs were based on the quantity and local market prices of all supplies. Expert opinion was used to measure the costs of the supplies as market prices were not available. The costs of renting spaces were based on current renting building prices in the specific area the building was located. A discount rate of three per cent was used to measure the renting building prices of 2016. Training costs and transportation fee for the visitors, being the remaining recurrent costs, were assessed on the basis of expert opinion.

Non-health care costs were taken into account to estimate the cost of the harm reduction community meeting of the society as a whole. Non-health care costs, also known as household costs, comprised the visitors costs for seeking and undergoing the harm reduction community meeting. IDUs had to travel to the harm reduction community meeting, take off from paid work, and sacrifice useful time at home to take advantage of the harm reduction community meetings. A survey was conducted among a sample of 23 IDUs who visited the harm reduction community meetings between April and May 2017 to determine the household costs. The questionnaire (see Appendix) contained questions associated with the IDUs visit to the meetings. Information about the visitors’ occupation and income, travel costs, and travel time were obtained during the interview. To avoid double counting, the two-way travel costs of the visitors were not included in the societal costs as the visitors also received a transportation fee from Grapiks covering their total transport costs.

All costs were measured in Indonesian Rupiah (IDR), and converted to US$ using the
official exchange rate of 2016 (15). Cost data were analyzed using Microsoft Excel 2007.

Additionally, a simple descriptive analysis was performed to obtain a rough picture of the effectiveness of the prevention strategy. The effectiveness of the harm reduction community meetings for IDUs was assessed on the basis of a survey among the visitors. Basic questions about the accessibility of the meeting, duration of the meeting, quality of the speaker and the provided knowledge about HIV were asked in the questionnaire.

2.3 Assumptions

Several assumptions were made to be able to perform the cost analysis. First, the cost data have been extrapolated to a complete year because data were present for nine months only. The harm reduction community meetings started in April 2016, so data of the first months of 2016 before starting were obviously.

Besides, cost data of the harm reduction community meetings were based on expert opinion. Data were retrieved by asking specific questions to personnel of Grapiks active in the harm reduction community meetings, because the data were not documented in writing. The knowledge of these experts was assumed to be sufficient enough to provide accurate information.

Furthermore, the discussed topic of the harm reduction community meetings was assumed to be HIV/AIDS, even though also other topics were discussed. Based on this assumption, the total duration of harm reduction community meetings was taken into account, regardless the duration spent on other topics besides HIV/AIDS education.

Finally, the total furniture costs of the puskesmas and HIV/AIDS clinic were based on the furniture costs of only two different puskesmas. These two puskesmas were different in size, one puskesmas was a bit smaller than the other more spacious puskesmas. Because of the differences in sizes of the puskesmas, the assumption was made that the extrapolation to the other puskesmas and HIV/AIDS clinic was appropriate.

2.4 Sensitivity analysis

A sensitivity analysis was performed to determine how differences in the costs items impact the societal costs under a given set of assumptions. The accuracy of the information given by the experts, was examined by varying the three highest cost items, using a 15 per cent over- and underestimation approach. The influence of taking the total duration of the harm reduction community meeting into account was examined by varying the duration of the meeting in the three highest cost items with 15 and 30 per cent underestimation. The baseline societal costs were compared with the parameter variations.

3. Results

3.1 Costs of the harm reduction community meeting

A total number of 133 harm reduction community meetings were conducted in 11 puskesmas and one HIV/AIDS clinic during the one-year period. Every puskesmas and the HIV/AIDS clinic provided one harm reduction community meeting per month, except for one puskesmas providing just one harm reduction community meeting in 2016. The annual costs per cost input and total annual costs of the harm reduction community meetings categorized in health care costs (Global Fund costs and sponsored costs), non-health care costs (visitors costs), and societal costs were summarized in table 1. The annual societal costs of conducting the harm reduction community meetings were US$ 48,618.31, with a unit cost per meeting of US$ 365.55. As shown in figure 1, the transportation fee for the visitors (US$ 14,990.61, 30.8%) constituted the largest cost item, followed by the personnel costs (US$ 13,509.59, 27.8%) and household costs (US$ 10,418.98, 21.5%). Capital costs constituted 1.2% (US$ 598.47) of the societal costs.
Table 1. Annual costs of harm reduction community meetings grouped by different funders in US$, using the exchange rate of 2016.

<table>
<thead>
<tr>
<th>Cost inputs</th>
<th>Global Fund costs (a)</th>
<th>Sponsored costs (b)</th>
<th>Health care costs (c) = (a) + (b)</th>
<th>Visitors costs (d)</th>
<th>Societal costs (e) = (c) + (d)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Capital Costs (annualized)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.1. Equipment, capital</td>
<td>414.08</td>
<td>-</td>
<td>414.08</td>
<td>-</td>
<td>414.08</td>
</tr>
<tr>
<td><strong>Sub-Total</strong></td>
<td>414.08</td>
<td>184.39</td>
<td>598.47</td>
<td>-</td>
<td>598.47</td>
</tr>
<tr>
<td>2. Recurrent Costs</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.1. Equipment, recurrent</td>
<td>504.95</td>
<td>-</td>
<td>504.95</td>
<td>-</td>
<td>504.95</td>
</tr>
<tr>
<td>2.2. Personnel</td>
<td>13,509.59</td>
<td>-</td>
<td>13,509.59</td>
<td>-</td>
<td>13,509.59</td>
</tr>
<tr>
<td>2.3. Supplies</td>
<td>3,355.04</td>
<td>869.43</td>
<td>4,224.47</td>
<td>-</td>
<td>4,224.47</td>
</tr>
<tr>
<td>2.4. Building: space and operation</td>
<td>1,576.20</td>
<td>1,349.24</td>
<td>2,925.44</td>
<td>-</td>
<td>2,925.44</td>
</tr>
<tr>
<td>2.5. Training</td>
<td>1,438.76</td>
<td>7.04</td>
<td>1,445.81</td>
<td>-</td>
<td>1,445.81</td>
</tr>
<tr>
<td>2.6. Transportation fee</td>
<td>14,990.61</td>
<td>-</td>
<td>14,990.61</td>
<td>-</td>
<td>14,990.61</td>
</tr>
<tr>
<td><strong>Sub-Total</strong></td>
<td>35,375.15</td>
<td>2,225.71</td>
<td>37,600.86</td>
<td>-</td>
<td>37,600.86</td>
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<tr>
<td>3. Household costs</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.1. Two-way travel costs*</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>5,100.39</td>
<td>-</td>
</tr>
<tr>
<td>3.2. Productivity loss</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>10,418.98</td>
<td>10,418.98</td>
</tr>
<tr>
<td><strong>Sub-Total</strong></td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>15,519.36</td>
<td>10,418.98</td>
</tr>
<tr>
<td>4. Total costs</td>
<td>35,789.23</td>
<td>2,410.10</td>
<td>38,199.33</td>
<td>15,519.36</td>
<td>48,618.31</td>
</tr>
<tr>
<td>5. Costs per meeting</td>
<td>269.09</td>
<td>18.12</td>
<td>287.21</td>
<td>116.69</td>
<td>365.55</td>
</tr>
</tbody>
</table>

*The two-way travel costs were not included in the societal costs to avoid double counting.

Not all of the health care costs were funded by Global Fund, some items were sponsored by random individuals or by the AIDS commission of Bandung (Komisi Penanggulangan AIDS). From the perspective of Global Fund, the annual costs of funding the harm reduction community meetings were US$ 35,789.23 (73.6%). These costs were mainly due to recurrent cost items (US$ 35,375.15, 98.8%). The annual costs of funding the community meetings for the sponsors and visitors, being the remaining funders, were respectively US$ 2,410.10 and US$ 15,519.36.

3.2 Qualitative findings

Overall, the effectiveness of the harm reduction community meeting was marked with an 8.8 by 23 IDUs. Marks above average were given for different sections of the harm reduction community meetings, such as the accessibility of the meeting (8.6), the duration of the meeting (8.4), the quality of the speaker (8.9), and the provided knowledge about HIV (9.5). Most IDUs indicated that their knowledge about HIV and other discussed topics was increased during the meetings (39.1%).
3.3 Sensitivity analysis

The results of the sensitivity analysis are shown in table 2. Changing the accuracy of the information given by the experts by 15 per cent under- and overestimation, resulted in an increase or decrease of the societal costs with US$ 4,275.00 (8.8%). A decrease of the duration of the harm reduction community meeting with 15 and 30 per cent resulted in a decrease of the societal cost of respectively US$ 3,589.29 (7.4%) and US$ 7,178.57 (14.8%).

Table 2. Results of sensitivity analysis in US$. Situation 1 = Expert opinion varied with 15% underestimation; Situation 2 = Expert opinion varied with 15% overestimation; Situation 3 = Duration of the meeting varied with 15% underestimation; Situation 4 = Duration of the meeting varied with 30% underestimation.

<table>
<thead>
<tr>
<th></th>
<th>Total annualized costs (US$)</th>
<th>Unit costs per meeting (US$)</th>
<th>% compared to current situation (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Current situation</td>
<td>48,618.31</td>
<td>365.55</td>
<td>100.0</td>
</tr>
<tr>
<td>Sensitivity 1</td>
<td>44,343.27</td>
<td>333.41</td>
<td>91.2</td>
</tr>
<tr>
<td>Sensitivity 2</td>
<td>52,893.33</td>
<td>397.69</td>
<td>108.8</td>
</tr>
<tr>
<td>Sensitivity 3</td>
<td>45,029.02</td>
<td>338.56</td>
<td>92.6</td>
</tr>
<tr>
<td>Sensitivity 4</td>
<td>41,439.74</td>
<td>311.58</td>
<td>85.2</td>
</tr>
</tbody>
</table>
4. Discussion

To allow policy makers to make evidence-based decisions about prioritizing various interventions focused on HIV/AIDS, this study examined the costs of the harm reduction community meeting for IDUs from a societal perspective in 2016.

The analysis shows that the costs of the harm reduction community meeting are US$ 48,618.33 in total and US$ 365.55 per meeting.

The transportation fee constitute the largest cost item (30.8%), and therefore offers potential for efficiency gains. For example, decreasing the transportation fee for the visitors is one way to reduce the total costs of the harm reduction community meeting as the transportation fee turned out to be way higher than the actual travel costs made by the visitors. However, during the interviews, personnel of Grapiks indicated that there is a possibility that the IDUs will not participate in the harm reduction community meeting if they do not receive an incentive anymore. A balance between the attractiveness of the community meeting for IDUs and the possible cost-savings is needed to determine the amount of money that should be available for the transportation fee. Lowering the transportation fee should not lead to a harm reduction community meeting which is less effective.

Other high cost items are personnel costs and non-health care costs, which are also potential cost categories to look at for saving costs. For example, decreasing the amount of staff members will decrease the total costs of the harm reduction community meeting. The potential cost-savings, however, should not result in a lower quality of the harm reduction community meeting. If the same activities are needed to be achieved by less staff members, it would be hard to reach the ideal situation of cost-savings on personnel costs with the same quality of the community meeting. The productivity loss per visitor, and therefore the total costs of the harm reduction community meeting, could be reduced by lowering the duration of the community meeting as the visitor will subsequently spend less time at the meeting. Again, it is important to take the quality of the community meeting into account as it might be hampered when there is less time to increase the knowledge of IDUs about HIV during the meeting.

This study also shows that the capital costs are low (US$ 598.47, 1.2%) compared to the total costs. Yet, the capital costs consists of the equipment and furniture costs. As the harm reduction community meeting takes place in puskesmas and the HIV/AIDS clinic the shared allocation of equipment and furniture with the puskesmas and HIV/AIDS clinic is low, and therefore the capital costs are low.

The results show that the main donor of Grapiks is Global Fund, which funds 73.6% of the total societal costs (US$ 35,789.23). The other funders are other sponsors or visitors of the harm reduction community meeting. This finding indicates that donation of Global Fund is required to carry out the community meetings, which might lead to uncertainties when Global Fund suddenly stops funding.

At last, the qualitative findings show that the effectiveness of the harm reduction community meeting seems high, an average mark of 8.8 was given by the visitors.

To our knowledge, this is the first study that estimated the costs of the harm reduction community meeting for IDUs in Indonesia. Cost analysis have been done on HIV prevention programs for IDUs, but the study setting and program were mostly different with the harm reduction community meeting investigated in this study. For example, the study of Afrandi et al. conducted a cost analysis on another HIV prevention program for IDUs, namely hospital-based MMT meeting (18). The study setting of the study of Afrandi et al. is similar with this study. The costs per visitor of the hospital-based MMT meeting (US$ 7.57) are in the same range with the costs per visitor of the harm reduction community meeting (US$ 14.89). However, the costs per visitor of the hospital-based MMT meeting are lower. This could be explained by the difference in observation period between the studies. The study of Afrandi et al. was conducted for the observation period 2006-2007. The monthly wages and the monetary value of a building are increased over the years, which might have contribute to the higher costs per visitor of the harm reduction community meeting for IDUs. However, more research on the costs of harm reduction community meetings for IDUs is needed.
to determine the validity of the results of this study.

4.1 Limitations

This cost analysis is based on the WHO training manual of Creese and Parker (22). However, this study still has a number of limitations.

First, the study setting was limited to one NGO which conducts the harm reduction community meeting in Bandung, Indonesia. Costs are likely to differ from organisation to organisation and therefore conclusions on the costs of harm reduction community meeting can only be drawn for this particular organisation. Additional cost analyses in other settings should be considered to draw more conclusions.

Second, some of the assumptions made to complete the cost analysis might affect the results of this study. First, some costs were solely based on expert opinion, and therefore might have led to an under- or overestimation of the societal costs. However, the sensitivity analysis showed an increase or decrease of the societal costs with only 8.8% after changing the accuracy of the information given by the experts by 15% under- and overestimation in the highest cost items. An explanation could be that the experts were featured with enough knowledge to give accurate information. Second, the total duration of the harm reduction community meeting was taken into account, even though also other topics besides HIV/AIDS were discussed, which might have led to an overestimation of the societal costs. The sensitivity analysis, however, showed a decrease of the total costs with only 7.4% and 14.8% after decreasing the duration of the harm reduction community meeting in the three highest cost items with respectively 15% and 30%. Third, the total furniture costs were based on the furniture costs of only two puskesmas instead of the 11 puskesmas and the HIV/AIDS clinic in which the harm reduction community meetings were given. This could have resulted in a difference in costs compared to the original costs. However, the furniture costs were only 0.4% (US$ 184.39) of the total costs. Fourth, data of the beginning of 2016 was not available because the harm reduction community meetings started in April 2016. The extrapolation on cost data from nine months only to a complete year might have caused a deviation from the real costs.

Besides limitations due to assumptions, some cost items were not included in the cost analysis due to absence of data, such as electricity, water and lighting costs and delivery costs. Furthermore, costs savings related to the social impact of the harm reduction community meeting (e.g. increasing productivity) were not taken into account.

Moreover, the non-health care costs were based on a survey among the visitors of only two harm reduction community meetings. There were approximately 11 harm reduction community meetings per month. Since the community meetings were given in different districts of Bandung, differences between the non-health care costs of the visitors from the several districts were possible. These differences were not taken into account despite the possibility of small differences between districts.

Finally, the effectiveness of the harm reduction community meeting was based on a questionnaire filled in by only 23 visitors. Besides that, the IDUs may have been under influence of drugs during the harm reduction community meeting and during the time the questionnaire was filled in. Furthermore, the questions were mainly focused on visitors’ satisfaction of the community meeting, and not entirely on the effectiveness. Therefore, conclusions about the effectiveness cannot be drawn from this study.

4.2 Recommendations

Despite the high costs, it is recommended to continue providing the harm reduction community meetings. Harm reduction community meetings for IDUs seems very effective in reducing the impact of HIV/AIDS in Indonesia.

We proposed the following recommendations for improvement.

First, it is recommended to search for opportunities to reduce the high costs of the community meeting. Overall, the total costs of the harm reduction community meetings can be reduced by decreasing the transportation fee for the visitors. However, it is important to investigate the degree in which this fee can be decreased without losing IDUs coming to the harm reduction community meeting.

Furthermore, it is advised to conduct additional cost analyses in other settings. This study can be used for priority setting for HIV interventions in Indonesia. However, this study is
limited to only one setting. More cost analyses in other settings are necessary to be able to extrapolate cost information on harm reduction community meetings to entire Indonesia.

Because Global Fund is currently the main funder of the program, additional funders of the harm reduction community meeting are needed. If Global Fund suddenly stops funding, the existence of the program will be insecure. It is therefore recommended to search for additional funders.

Finally, it is advised to conduct further research on the effectiveness of the harm reduction community meeting. This research should include more study participants from several districts. Besides, it is of great importance that IDUs are not under influence of drugs during the effectiveness measurements. Reliable and validated questionnaires about effectiveness are required in this research.

5. Conclusion

This study has provided information on the costs of harm reduction community meetings for IDUs in Indonesia in 2016. The annual costs per harm reduction community meeting are high (US$ 365.55), mainly determined by transportation fee, personnel costs and productivity loss. Transportation fee for the visitors offers potential for efficiency gains as it turns out to be the largest cost item. Further research on the effectiveness of the harm reduction community meeting is required to draw any conclusions about the effectiveness. This study can be used by policy makers to make evidence-based decisions about prioritizing the HIV prevention programs in Indonesia.

6. Acknowledgements

I would like to thank the personnel of Grapiks for supporting this study and providing the cost data required for the analysis. Furthermore, I would like to thank my colleagues, M.P. Hutama and I.Y. Mambea, from the PRISMA project and Padjadjaran University for the assistance during my period of research in Indonesia. At last, my gratitude goes out to Prof. Dr. R. Baltussen and Dr. A.Y.M. Siregar for supervising me during my research.

6. References

11. Afriandi I, Aditama TY, Mustikawati D, Oktavia M, Alisjahbana B, Riono P. HIV and injecting drug use in Indonesia: epidemiology and
Appendix

Questionnaire

Please answer the following questions by writing down your answers, or by ticking (√) the appropriate box (□). If you have trouble in answering a question, do not hesitate to ask the enumerator.

A. RESPONDENT PROFILE

1. ID: ________________________________

2. Place of stay: ________________________________

3. Sex:  □ Male 1  □ Female 2

4. Age: ............ year

5. Last degree of completed education:

6. Current marital status:
   □ not yet married  0  □ married 1  □ divorced 2  □ widowed 3

7. Number of children ............

B OCCUPATION AND INCOME

8. What is your current occupation?
   (you may give more than one answer, proceed question 12 if you do not have a paid job)

   -------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

9. What is your average monthly income?
   (if you have more than one occupation, please state the total income)

   Rp .........................

10. How many hours do you work per day? ...... hours

11. How many days do you work per week? ...... days
12. To fulfill your own monthly needs, do you also receive money from other people? Please state in the following table as well as the amount.

<table>
<thead>
<tr>
<th>No</th>
<th>Receive money from</th>
<th>Last month amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Parents</td>
<td>Rp ..................</td>
</tr>
<tr>
<td>2</td>
<td>Siblings</td>
<td>Rp ..................</td>
</tr>
<tr>
<td>3</td>
<td>Other relatives</td>
<td>Rp ..................</td>
</tr>
<tr>
<td>4</td>
<td>Children</td>
<td>Rp ..................</td>
</tr>
<tr>
<td>5</td>
<td>Friends</td>
<td>Rp ..................</td>
</tr>
<tr>
<td>6</td>
<td>Selling own goods</td>
<td>Rp ..................</td>
</tr>
<tr>
<td>7</td>
<td>Borrow from ...</td>
<td>Rp ..................</td>
</tr>
<tr>
<td>8</td>
<td>Others, please state ......</td>
<td>Rp ..................</td>
</tr>
</tbody>
</table>

13. Please state and detail your own monthly expenses

<table>
<thead>
<tr>
<th>No</th>
<th>Expenses</th>
<th>Last month amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>House rent/mortgage</td>
<td>Rp ..................</td>
</tr>
<tr>
<td>2</td>
<td>Electricity, water, telephone</td>
<td>Rp ..................</td>
</tr>
<tr>
<td>3</td>
<td>Water</td>
<td>Rp ..................</td>
</tr>
<tr>
<td>4</td>
<td>Telephone</td>
<td>Rp ..................</td>
</tr>
<tr>
<td>5</td>
<td>Transport/gasoline</td>
<td>Rp ..................</td>
</tr>
<tr>
<td>6</td>
<td>Cellphone credit</td>
<td>Rp ..................</td>
</tr>
<tr>
<td>7</td>
<td>Food at home</td>
<td>Rp ..................</td>
</tr>
<tr>
<td>8</td>
<td>Food out of home</td>
<td>Rp ..................</td>
</tr>
<tr>
<td>9</td>
<td>Entertainment (i.e. snacks, cinema)</td>
<td>Rp ..................</td>
</tr>
<tr>
<td>10</td>
<td>Cigarettes</td>
<td>Rp ..................</td>
</tr>
<tr>
<td>11</td>
<td>Health/doctor fee</td>
<td>Rp ..................</td>
</tr>
<tr>
<td>12</td>
<td>Medication</td>
<td>Rp ..................</td>
</tr>
<tr>
<td>13</td>
<td>Savings</td>
<td>Rp ..................</td>
</tr>
<tr>
<td>14</td>
<td>Others, please state ..............</td>
<td>Rp ..................</td>
</tr>
</tbody>
</table>

14. Who is currently staying with you?

To fill the following tabel:
- Please circle the number of the person who is currently living with you, if he/she is not on the list, please state on number 7-10
- Please state the occupation of the person (including housewife, students, or unemployed) and his/her income
<table>
<thead>
<tr>
<th></th>
<th>A. Family member/accompanying person</th>
<th>B. Occupation</th>
<th>C. Monthly income</th>
<th>D. Does this person accompany you to the health facility?</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Father</td>
<td>..</td>
<td>Rp................</td>
<td>□</td>
</tr>
<tr>
<td>2</td>
<td>Mother</td>
<td>..</td>
<td>Rp................</td>
<td>□</td>
</tr>
<tr>
<td>3</td>
<td>Older sibling</td>
<td>..</td>
<td>Rp................</td>
<td>□</td>
</tr>
<tr>
<td>4</td>
<td>Younger sibling</td>
<td>..</td>
<td>Rp................</td>
<td>□</td>
</tr>
<tr>
<td>5</td>
<td>Spouse</td>
<td>..</td>
<td>Rp................</td>
<td>□</td>
</tr>
<tr>
<td>6</td>
<td>Child</td>
<td>..</td>
<td>Rp................</td>
<td>□</td>
</tr>
<tr>
<td>7</td>
<td>..</td>
<td>..</td>
<td>Rp................</td>
<td>□</td>
</tr>
<tr>
<td>8</td>
<td>..</td>
<td>..</td>
<td>Rp................</td>
<td>□</td>
</tr>
<tr>
<td>9</td>
<td>..</td>
<td>..</td>
<td>Rp................</td>
<td>□</td>
</tr>
<tr>
<td>10</td>
<td>..</td>
<td>..</td>
<td>Rp................</td>
<td>□</td>
</tr>
</tbody>
</table>

C A VISIT TO THE FACILITY

15. How do you reach the facility?
   □ 1. On foot                              □ 6. Public transport (car)
   □ 2. Bicycle                             □ 7. Taxi
   □ 5. Car

16. How long is your travel time to reach the facility? .. minutes

17. On your visit to the facility, how much do you spent in average for:

   a. Two way transport for yourself Rp.............
   b. Two way transport for person(s) accompanying you Rp.............
   c. Registration Rp.............
   d. Medical treatment Rp.............
   e. Materials received during meeting Rp.............
   f. .. Rp.............
   g. .. Rp.............

18. How much time do you spent in the facility? (including waiting time) .. minutes
**D EFFECTIVENESS**

19. What mark would you give the harm reduction community meeting from 1 up to 10 regarding the accessibility of the meeting? Please explain.

20. What mark would you give the harm reduction community meeting from 1 up to 10 regarding the clarity of the information? Please explain.

21. What mark would you give the harm reduction community meeting from 1 up to 10 regarding the duration of the meeting? Please explain.

22. What mark would you give the harm reduction community meeting from 1 up to 10 regarding the quality of the teacher? Please explain.

23. What did you learn in the harm reduction community meeting?

24. From 1 up to 10, how much did you feel like you possessed all the knowledge about HIV prevention before attending the meeting?

25. What are positive aspects of the harm reduction community meetings?

26. What do you think that could be improved of the harm reduction community meetings?