Dropping out of school because of Menstruation?

-

An analysis of factors of success for Menstrual Hygiene Management-projects in low and lower-middle income countries

Masterarbeit

im Fach

International Development Studies

an den Fachbereichen

Gesellschaftswissenschaften und Philosophie

und Wirtschaftswissenschaften

der Philipps-Universität Marburg

vorgelegt von

Steffi Rönitzsch,

geboren in Freital

Marburg, 2015

Erste Gutachterin: PD Dr. Claudia Wiesner
Zweite Gutachterin: Prof. Dr. Annette Henninger

Abstract

Background and aims: Former research reveals that many girls in developing countries are challenged by the management of menstruation in their educational settings. Absenteeism during menstruation is a consequential occurrence that can potentially lead girls to drop out of school completely. Over the past decade, these findings have led to increased interest in Menstrual Hygiene Management by developmental organisations. The aim of this thesis is to analyse whether the interventions such organisations conduct in order to improve these situations indeed lead to improvements in school attendance and, if so, to identify factors of success.

Methodology: The socio-ecological framework for Menstrual Hygiene Management is used as a theoretical foundation for the topic. A qualitative approach, based on a comparison of four case studies together with results from seven expert interviews, is used to gather information.

Results: The case studies show that the interventions 'education', 'provision of sanitary items', and the combination of both, have a positive impact on the reduction of menstruation-related school absenteeism but cannot completely prevent it. Analysis of the studies as well as the interviews suggests that, in addition to the promotion of sanitary items and sanitary infrastructure, the provision of menstruation-related education to girls and their communities is a key factor of success to keeping girls in school.

Conclusion: Menstrual Hygiene Management projects should include a holistic educational programme that is adapted to cultural contexts that focuses on teaching not only girls, but also their families, schools and communities. Furthermore, the promotion of access to sanitary items and adequate sanitary infrastructure is advised and a programme to support this should involve local stakeholders to ensure its long-term utilisation.

Content

Abstract I

Abbreviations V

List of illustrations VI

1. Introduction 1

2. Menstrual hygiene and its embedment in the development-theoretical context 3

2.1. Challenges for girls 3

2.2. Relevance of menstrual hygiene for achieving the millennium development goals 5

3. Theoretical embedding of menstrual hygiene 8

3.1. Ecological framework for human development 8

3.2. Socio-ecological framework for Menstrual Hygiene Management 9

3.3. Definition Menstrual Hygiene Management (MHM) 11

4. Literature review 12

4.1. Current state of research 12

4.2. Identification of research gaps 14

5. Research Design 16

5.1. Aim and objectives 16

5.2. Methodology of the scientific approach 16

5.2.1. Analysis of scientific case studies 17

5.2.2. Execution of interviews 18

5.2.2.1. Sampling 18

5.2.2.2. Development of interview guideline 20

5.2.2.3. Planning and execution of interviews 22

5.2.2.4. Analysis of interviews 23

6. Analysis 25

6.1. Summary of the case studies 25

6.1.1. FAWE: Report on the impact of feminine hygiene on girls participation in education in Kenya 25

6.1.2. Wilson, Emily et al.: Report on the development of an acceptable and replicable menstrual hygiene intervention 26

6.1.3. Montgomery, Paul et al.: Report on a pilot study about sanitary pad interventions for girls' education in Ghana 27

6.1.4. Oster, Emily et al.: Report on randomized evaluation of menstruation, sanitary products and school attendance in Nepal 29

6.2. Summary of the conducted interviews 30

6.3. Analysis: Do MHM-interventions lead to higher school attendance? 32

6.4. Analysis of factors of success 33

6.4.1. How do we define 'success'? 33

6.4.2. Factors of success for school attendance 35

6.4.3. Factors of success for menstrual hygiene projects 42

6.5. Analysis of hampering factors 46

6.5.1. Hampering factors for school attendance 47

6.5.2. Hampering factors for menstrual hygiene projects 49

6.6. Recommendations and lessons learned by the experts 51

6.7. Representation of key factors of success to reduce menstruation related absenteeism 54

6.8. Results and recommendations for MHM-activities 59

6.9. Limitations and discussion 61

7. Conclusion 63

References 65

Online References 70

Annex 72
Annex 1: Gender parity index 72
Annex 2: Ecological model by Bronfenbrenner 73
Annex 3: List of conducted and potential interviewees 74
Annex 4: Interview guideline researcher 75
Annex 5: Interview guideline activists 77
Annex 6: Notations 80
Annex 7: Code system MAXQDA, 05.12.2014 81
Annex 8: Summary of case studies 86
Annex 9: Code system coloured 92
Annex 10: Portraits of document 92
Annex 11: Frequency table 'Lessons learned' 94

Abbreviations

FAWE	Forum for African Women Educationalists
MHM	Menstrual Hygiene Management
MH	Menstrual Hygiene
NGO	Non-governmental organisation
PP	Project partner
UN	United Nations
UNICEF	United Nations International Children's Fund
WASH	Water, Sanitation and Hygiene

List of illustrations

Image 1: Socio-ecological framework for Menstrual Hygiene Management 9

Image 2: Necessities for Menstrual Hygiene Management and possible fields of work 11

Image 3: Aims of a MHM-project..... 34

Image 4: Factors of success for school attendance..... 36

Image 5: Factors of success for MHM-projects 42

Image 6: Hampering factors for school attendance..... 47

Image 7: Hampering factors for MHM-projects 49

Image 8: Recommendations 51

Image 9: Overview about the importance of education and awareness 55

Image 10: Overview about the importance of sanitary facilities and items 57

1. Introduction

In 2000 the United Nations (UN) announced universal primary education and gender equality as two of the Millennium Development Goals (MDG) to be achieved by 2015. MDG 2, universal access to primary education, was already achieved by 2010. The MDG for gender equality (MDG 3), however, will not be reached by the targeted deadline. The gender parity index, an indicator for gender equality, shows that in 2011, gender equality at all levels of education was only achieved by two out of 130 countries.[1]

Experts have discovered that many girls in developing countries drop out of school when they begin menstruation. Lack of sanitary infrastructure and sanitary items prevents girls from practising proper menstrual hygiene. While this can certainly have an adverse impact on girls' health, it also hinders them from attending school given the constant fear of blood staining their clothes. Additionally, some cultures, traditions and religious beliefs stigmatise menstruation, and this leads to neglect of the importance of the topic. Hence, girls lack support and counselling needed to be able to handle menstruation safely and with dignity. Due to these challenges girls may miss school several days per month. Such temporary absenteeism can lead to a permanent drop out from school.[2]

Developmental organisations have recently approached the problem by setting up programmes to conduct different types of interventions with the overall aim to improve the management of menstrual hygiene. In this thesis, an answer is sought to the question: **What are factors of success for Menstrual Hygiene Management in low and lower-middle income countries in order to improve school attendance among adolescent girls?**

To answer this question a qualitative approach is applied. The research includes a comparative analysis of four case studies as well as analysis of interviews conducted with experts who work in the field of Menstrual Hygiene Management (MHM) in developing countries. The case studies highlight several different MHM-interventions and measure

[1]Cf.http://www.bmz.de/de/was_wir_machen/themen/menschenrechte/frauenrechte/arbeitsfelder_und_instrumente/bildung/index.html. Please see annex 1 page 67 for details.
[2] Cf. Kirk J., Sommer M. 2006: 6.

the quantitative effect of these approaches on the school attendance of girls. The analysis of interviews with experts aims to gather practical information about which specific interventions and factors are favourable in order to reduce menstruation-related absenteeism. Finally, factors of success and factors that hamper school attendance, as well as menstrual hygiene projects in general, are identified with recommendations and a summary of lessons learned.

Based on the identified key factors of success, hypotheses are deducted and recommendations for the design of a favourable MHM-project are given.

The research considers case studies which took place in Ghana, Kenya and India, as well as opinions of experts who gained their practical experiences in India, Nepal, Tanzania, Kenya and Uganda. These countries are, according to the World Bank, defined as 'low-income' and 'lower-middle income' countries. The main indicator for this classification is the gross national income per capita (GNI) and refers to official data from 2013.[3] Hence, results and recommendations can only be applied to these specific regions and must in all cases be adapted to local contexts.

[3] Low income countries: GNI per capita of $1,045 or less, lower-middle-income countries: GNI per capita between $1,046 and $4,125. Cf: http://data.worldbank.org/about/country-and-lending-groups.

2. Menstrual hygiene and its embedment in the development-theoretical context

Approximately 26% of the world's population are females of reproductive age and are hence menstruating. Menstruation is a normal biological process that indicates a females' ability to have children.[4] However, there are societies in which menstruation is stigmatised. There are misconceptions, stereotypes and prejudices which make menstruation taboo. Due to the taboo females feel ashamed to talk about menstruation, even among themselves. The concealment continues among the community and society and results in the absence of regulations in educational and labour law. Around 200 million girls and women especially in low- and middle-income countries suffer from consequences of the disregarded importance of appropriate menstrual hygiene.[5] Some lack sanitary items because they cannot afford or access them. Some lack adequate sanitary facilities in schools or their work place due to deficient legal regulations. Some face social restrictions or even exclusion because of cultural norms. Some have dysmenorrhea and fail to receive, due to the taboo, appropriate counselling or pain relief.[6]

Young girls from developmental regions particularly experience difficulties in handling their menstruation in school. These challenges are described in detail in the following section 2.1. The broader consequences which can potentially have a long-term impact on a females' life will be explained in 2.2.

2.1. Challenges for girls

Stigmatisation of menstruation and subsequent consequences from the neglect constitute a challenge especially for females in developmental countries. Many societies justify their perception towards menstruation and hence the stigmatisation and taboo nature of it, by religious and traditional beliefs. Often females **lack the access to information** to be able to pronounce against these prepossessions.[7] Christianity, Islam, Hinduism and Judaism: all of them consider menstruation as something impure. They impose obligations or restrictions on menstruating females. These rules are sometimes written in reli-

[4] Cf. House S., Mahon T., Cavill S. 2012: 8.
[5] Cf. Crofts T., Fischer J. 2012: 3.
[6] Cf. Kirk, J., Sommer M. 2006: 1 ff.
[7] Cf. House S., Mahon T., Cavill S. 2012: 22 f.

gious scripts such as the Bible or the Qur'an or are verbally delivered. Additionally they are interpreted differently depending on the region or sub-group (especially casts in the Hindu system) and are abided by more or less strictly.[8] Going along with these religious based aspects there are many misconceptions and myths. Many females are confronted with restrictions which they have to follow, sometimes out of fear of undesired consequences. There are restrictions on using water sources, eating certain types of foods and on cooking and bathing. Some are excluded from societal activities such as religious ceremonies; some have to sleep separately from the family or outside the house. Others are not allowed to get in contact with men. These practises have the potential to restrict girls on attending school. Hence, it is fairly obvious that the **lack of knowledge** challenges them and in consequence hampers their school attendance. Their physical and mental well-being can furthermore be influenced by menstruation. Some girls perform worse in school due to lack of concentration because of pain or shame.[9]

Due to the stigmatisation, girls' need to handle menstruation with dignity is often disregarded. This is reinforced by poverty because the acquisition of goods needs to be prioritised and traditional gender roles favour men in the decision making processes. Due to the **lack of involvement** and **lack of social support,** girls face **difficulties to access appropriate infrastructure and sanitary items.**[10] Sanitary items are either sometimes simply not available, especially in rural areas, or too expensive. A box of eight to ten sanitary pads costs for example in Uganda between 0.70$ and 1.20$. This represents, especially for families with many females, a financial burden and is often not affordable. Girls are thus often afraid to stain their clothes and therefore prefer to stay at home during menstruation. The absence of safe sanitary items further forces girls to find alternative ways of handling their menstruation. They thus either use alternative methods such as toilet paper, rags, cloth, banana leaves, mud or resign from sanitary protection at all. These materials offer minimal absorption and still pose the risk of leaking and staining their clothes. This in turn affects their mental well-being as they often feel fear, shame, embarrassment and stigmatisation. Unhygienic materials furthermore foster the risk of adverse impacts on health. Unclean materials can lead to vaginal infections or, if

[8] Cf. House S., Mahon T., Cavill S. 2012: 25 ff.
[9] Cf. ibid: 27 ff.
[10] Cf. ibid: 22 ff.

used wet (washing of cloth is very common), skin irritations.[11] The absence of appropriate sanitary facilities, like toilets, sufficient amount of water and soap can also present a challenge. If there are no or not enough gender separated toilets the adolescents tend to leave class to go to forests or home to change pads and sometimes do not return.[12] Prospecting for hidden places additionally exposes them to the risk of getting harassed, abused or kidnapped and to other kinds of danger.[13] The lack of waste disposal and places for washing, either oneself, cloths or used materials, can lead to shame and embarrassment as well as foster unhygienic circumstances. This can facilitate the spread of bacteria or infections like Hepatitis B which does not only affect the girl herself but also her environment.[14]

Some girls could potentially access sanitary items but do not have the financial means due to poverty and/or social support. Girls in Kenya for example, engage in 'transaction sex'. They thereby offer sexual services to men in exchange for 'presents' like sanitary pads or cash which they invest in pads.[15]

In some societies menarche is associated with a girl's readiness to get married. The risk of early marriages and pregnancies often followed by dropouts from school thus increases.[16]

These challenges inhibit girls and women, particularly in developing countries, in their daily life activities during menstruation. The consequences resulting from those inadequate conditions for menstruation will be illustrated in the following paragraph.

2.2. Relevance of menstrual hygiene for achieving the millennium development goals

In 2000, the UN announced the 'millennium development goals' (MDG) which have the overall aim of poverty reduction. The world's leading development institutions as well as all UN countries have thereby agreed to a concept which targets the fulfilment of

[11] Cf. House S., Mahon T., Cavill S. 2012:33 ff.
[12] Cf. Mahon T., Fernandez M. 2010: 104.
[13] Cf. Shafi M. 2011: 7.
[14] Cf. House S., Mahon T., Cavill S. 2012: 34.
[15] Cf. Jewitt S., Ryley H. 2014: 143; House S., Mahon T., Cavill S. 2012: 83.
[16] Cf. Kirk, Sommer 2006: 5, Mahon T., Fernandez M. 2010: 104.

eight topics by 2015.[17] Five of those MDGs have a direct connection to menstrual hygiene. Thus, the achievement of these goals depends directly on the realisation of MHM.

This chapter illustrates how MHM could potentially contribute to attaining the objectives of the MDGs and also explains how the lack of proper MHM has hampered the achievement of those.

MDG 2 targets the achievement of universal primary education. Sub-goal 2.A aims at the enrolment of both boys and girls likewise in primary education and at an enrolment rate of 90%. Regarding the total enrolment rate, this goal has already been met in 2010 – 5 years ahead of the targeted point of time.[18] The same report honoured gender parity for primary education as achieved, even though some regions lagged behind. The gender-parity-index indicates 97% of parity for developing regions and 99% for developed regions.[19] However, when looking at all levels of education (primary, secondary and tertiary level of education) gender equality only exists in 2 out of 130 countries.[20] The disparity in gender increases with increasing levels of education. The region of Sub-Saharan Africa serves as an example: whereas the gender parity index shows a rate of 93% for primary education, it decreases to 82% for secondary education and even 63% at tertiary education.[21] This can partly be ascribed due to the various challenges girls face in the context of menstruation that lead to temporary or permanent drop-out from school. Nevertheless, the education of girls does contribute to the economic well-being of the overall society of a country. A study of the World Bank that included 100 countries demonstrates that a 1% increase of female secondary education leads to a 0.3% increase of annual per capita income.[22]

[17] Cf. http://www.un.org/millenniumgoals/bkgd.shtml.
[18] Cf. UN 2012: 17.
[19] Cf. ibid: 20.
[20] Cf. http://www.worldbank.org/mdgs/gender.html.
[21] Cf. UN 2012: 20,
Cf. http://www.bmz.de/de/was_wir_machen/ziele/ziele/MDGs_2015/fortschritte/mdg3/index.html.
[22] Cf. Chaaban J., Cunningham W. 2011: 3.

This demonstrates how MHM is not only linked to education but also to gender equality in general and the empowerment of women, which is embedded in MDG 3.[23] If women are unable to maintain their daily life activities because of adverse circumstances that limit the proper practise of MHM, they may not fully realize their potential. They may experience decreased productivity due to mental tension or even have to skip work for the time during their period. This can reduce opportunities for women to earn money. Particularly women and girls who are employed in the informal working sector, where work is paid based upon an employee's attendance or tied to the employee's on-site performance are affected.[24]

MDG 5 targets the improvement of maternal health to which menstrual hygiene has an obvious link. Mothers' as well as children's health benefit from improved menstrual hygiene because the risk of reproductive tract infections can be reduced.[25]

MDG 6 strives for environmental sustainability and it applies in the context of MHM especially to waste management. In an industrialised country, a woman uses on average 10.000 sanitary napkins or tampons in her lifetime.[26] The disposal of this waste often relies on the use of chemicals and/or incineration and is therefore already an ecological burden. However, many developing countries lack such waste-disposal systems. If women use self-made reusable cloths - which, if washed and dried properly, can be hygienically acceptable - waste-management is less of a problem. But in the case where women use modern sanitary technologies yet simultaneously lack proper waste- management the situation is aggravated. In this case women are forced to bury, burn or dispose the items in latrines, rivers or lakes and thereby pollute the environment.[27]

New technologies such as menstrual cups[28] can in some contexts be an option to overcome the environmental pollution caused by sanitary items. The invention of such new tools can be seen as a step towards the fulfilment of MDG 8.F, which aims to make

[23] Cf.http://www.bmz.de/de/was_wir_machen/ziele/ziele/millenniumsziele/MDGs_2015/mdg3/index.html
[24] Cf. George R. 2013: 3, 10.
[25] Cf. Tjon A. Ten 2007: 5.
[26] Cf. http://www.menstruationstassen.de/.
[27] Cf. Tjon A. Ten 2007: 7, Cf. George R. 2013: 11.
[28] A long-lasting reusable silicon cup, which is vaginal inserted that collects menstrual blood rather than absorbing it. Cf. http://menstrualcup.co/.

available benefits of new technologies in cooperation with the private sector. MDG 8, sub goal 8.E aims at the provision of affordable essential drugs in developing countries and could contribute to MHM by providing adequate pain killers for women suffering from dysmenorrhea.[29]

3. Theoretical embedding of menstrual hygiene

This chapter introduces the concept which was used to embed this research into a scientific setting. Firstly, the 'ecological framework for human development' (see 3.1) will be explained. This theoretical model constitutes the base of the 'Socio-ecological framework for Menstrual Hygiene Management' (see 3.2.).

3.1. Ecological framework for human development

In the late 1960s the US-American psychologist Urie Bronfenbrenner, developed the 'ecological framework for human development'. This conceptual model was continuously expanded by Bronfenbrenner which led to the formalisation of the framework for 'ecological model' in the late 1980s.[30]

Bronfenbrenner assumed that a person's development very much depends on his or her environment and that the interaction of both also has influence on both, one another. According to the model there are five levels which effect a person's development. The individual itself, determined by its sex, age and health, is influenced by the encircled microsystem, mesosystem, exosystem and macrosystem. All of these aspects continuously change. The chronosystem acknowledges time as a variable influencing the person as well as his or her environment.[31] In order to understand a person and the complex interaction within the environment (s)he lives, multi-level, multi-structured and multi-determined social contexts need to be examined.[32] Annex 2 (page 73) visualises the ecological model in general.

[29] Cf. Tjon A. Ten 2007: 7.
[30] Cf. Bronfenbrenner U. 1994: 37 f.
[31] Cf. Bronfenbrenner U. 1979: 22.
[32] Cf. Lazarus 2007: 72.

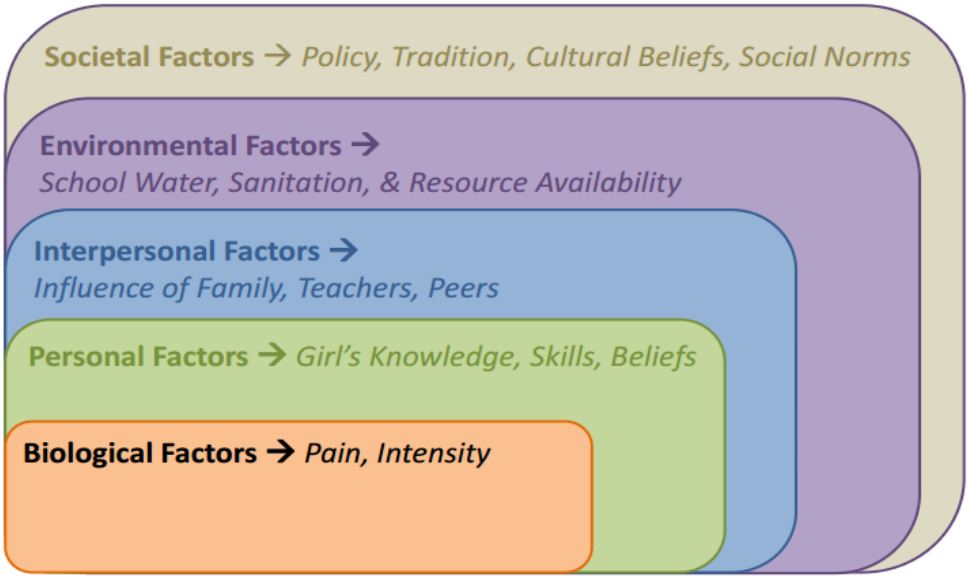
This ecological model has been adopted by sociology, psychology, public health and other fields. It was further applied according to the respective contexts, in order 'to define frameworks for how people interact with their physical, social and cultural environments.'[33] Consequently, whenever an issue occurs and a change for an individual or a whole community is desired, the model can be used to determine influencing factors and circumstances on which intervention can be planned.

3.2. Socio-ecological framework for Menstrual Hygiene Management

Menstrual Hygiene Management can be attributed to the field of public health. Within this realm the so-called 'socio-ecological-model' has found wide application and constitutes a practically developed sub-model of the initial ecological model.[34]

UNICEF (United Nations International Children's Fund) applied the 'socio ecological model' to the context of MHM. As a result, factors that are expected to influence MHM have been identified and analysed. One spectrum of various related aspects ranges from the individual practises of girls, to activities that are related to environmental circumstances. With support of this framework the following section will give an overview of which factors influence a girl with respect to menstruation.

Image 1: Socio-ecological framework for Menstrual Hygiene Management



Source: Own illustration, based on Fehr A. et al. 2013: 6.

[33] Fitzgibbon M., Kong A., Tussing- Humphreys L. 2014: 29.
[34] Cf. ibid: 29.

In this model, the individual level is represented by Biological Factors. This includes the age of a girl, the timing of her menarche and the lengths and intensity of her menstruation. All these aspects influence females and can lead to different physical pain (headache, abdominal pain, backache), premenstrual syndromes or psychological changes such as mood swings, fatigues or difficulties to concentrate.[35]

The microsystem is reflected by the Personal Factors. This comprises the personal knowledge, practical skills and beliefs of a girl which again influences her ability to handle menstruation. This includes the management of blood flow and pain and behavioural adaptions to better cope with menstruation.[36]

These abilities are accompanied by Interpersonal Factors such as the relationship to the family, teachers and peers and equate Bronfenbrenner's mesosystem. These individuals are usually 'systems of support' who educate adolescents about puberty and menstruation and thus determine what assistance girls receive and which perceptions they develop towards menstruation.[37]

The exosystem is represented by Environmental Factors such as the availability of sanitary facilities or the availability of sanitary items. Sanitary items foster the girls' ability to practise proper menstrual hygiene. Gender separated sanitation facilities with possibilities to wash and change and dispose items contribute to practise hygiene in privacy and dignity.[38]

The availability of such infrastructure depends on the support from Societal Factors. Bronfenbrenner's macrosystem includes norms and values of cultures, beliefs, ideologies, social structures and national resources and is represented by societal factors.[39] This could for example be the ministry of education which remits policies and provides funding. Such guidelines could for instance also be applied for curricula and foster the personal knowledge of girls as well as teachers. The role of religion, tradition and be-

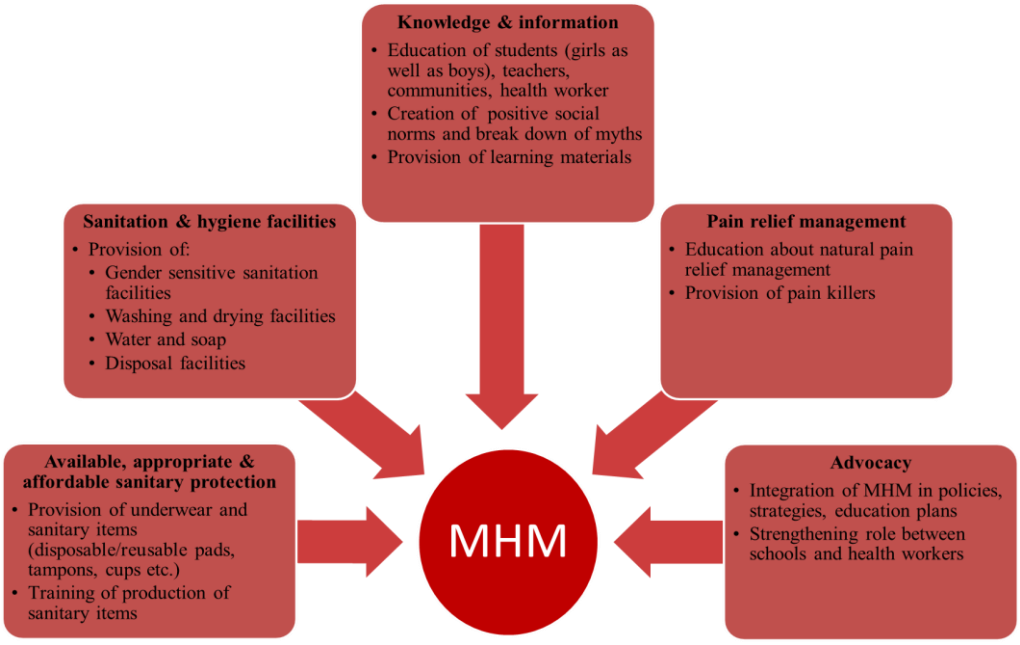
[35] Cf. Fehr A. et al. 2013: 27, House S., Mahon T., Cavill S. 2012: 37.
[36] Cf. Fehr A. et al. 2013: 22 ff.
[37] Cf. ibid: 18 ff.
[38] Cf. ibid: 17 f.
[39] Cf. See Annex 2: Ecological model by Bronfenbrenner.

liefs as other Societal Factors must not be underestimated in the context of menstrual health as they have far reaching impacts on all the other factors.[40]

3.3. Definition Menstrual Hygiene Management (MHM)

In order to approach the above mentioned challenges and to reduce their adverse implications to girls, Menstrual Hygiene Management as field of work was included in developmental programmes. It is institutionalised within the field of 'Water Sanitation and Hygiene' (WASH) and respective projects were included in their agenda during the previous years. These programmes focus on the creation of 'a supportive environment - for all women and girls to be able to manage their menses hygienically, safely, in privacy and with dignity'[41] and refer to ways how females can access, utilise and dispose sanitary items. House et al. as well as Crofts propose various requirements which are decisive for thorough MHM in general. The following graphic illustrates and summarises these necessities without placing emphasis on any of the aspects. It is the aim of this research to determine those aspects which are especially important for school attendance. Thereby the key factors of success for developmental programmes will be derived.

Image 2: Necessities for Menstrual Hygiene Management and possible fields of work



Source: Own illustration, based on House, Mahon, Cavill 2012: 17; Crofts T. 2012: 8f.

[40] Cf. Fehr A. et al. 2013: 16 f.
[41] Cf. House, S., Mahon, T., Cavill, S. 2012: 17.

4. Literature review

4.1. Current state of research

Menstrual Hygiene Management is an area of work that is relatively new for practical development assistance as well as for scientific research. In 2006, Kirk and Sommer released a paper which first announced the connection between girls' health and education focussing on menstruation. Since then other scientists and NGOs have paid more attention to the issue and different papers have been published emphasising hygiene practises and challenges for females.

In 2012, UNICEF in cooperation with the Center for Global Safe Water at Emory University carried out a multi-country research which assessed the menstrual hygiene related challenges girls face in Rwanda, Bolivia, the Philippines and Sierra Leone.

Rwandan girls report that the lack of adequate sanitary facilities constitutes a challenge for them. Their knowledge about menstruation is comparably good but the lack of facilities hampers them to apply this knowledge. Girls report that they prefer to stay at home during their period because it is easier for them to handle it. Menstruation is furthermore a taboo in the country's culture and thus it is hard for girls to address their desires like access to disposable pads and improved toilet facilities.[42]

Most of the Bolivian school girls, according to the researchers, are also very shy and try to hide their menses, which indicates that it is also a taboo for them. This is reinforced by the finding that the girls' knowledge is limited and based on local beliefs. Bolivian school girls use sanitary pads, cloths, toilet paper or do not have any sanitary protection. The lack of proper facilities is also stated as a challenge.[43]

The findings from the Philippines show that there are more toilets available than in the other countries even though their hygienic standard can be described as low. Girls report that the lack of privacy forces them to leave the school ground to look for private places in order to manage their menses. Both, the lack of hand washing facilities including

[42] Cf. Unicef 2012: 9.
[43] Cf. Unicef 2012: 11, Long J.L. et al. 2013.

soap and the lack of sanitary napkins, are identified as a problem.[44] The study recommends to provide 'sanitary napkins and educational materials'[45] and to employ school nurses as educators in order to help girls attend school during menses.

The majority of the girls interviewed in Sierra Leone believe that menstruation is a normal biological process linked to growing up. Still, 21.3% of the school girls in Sierra Leone report that they miss school during menstruation which is mainly due to pain, the fear of leakage and the lack of appropriate facilities.[46] The study exposes 'strong correlation between the lack of gender-separated latrines in schools and absenteeism among girls 9–14 years old.'[47] Many girls further report behaviour changes such as a preference to not stand up during class when they menstruate.

Crofts and Fischer (2012) investigate the challenges that schoolgirls in Uganda experience regarding their menstruation and examine whether low-cost-sanitary pads could be a solution. The researchers came to the result that cost effective pads (Afripads and Makapads) are indeed useful to improve the hygiene but that aspects like access to pain relief, safe water, adequate latrines as well as an educational component have to be included.[48]

There are more studies on menstrual hygiene with different regional foci available which will be named here but not further explained, because their relevance for this research is limited. For the African context studies have been published for Kenya by Jewitt S., Ryley H. (2014), Mc. Mahon S.A. et al. (2011) and for Tanzania by Sommer M. (2010). Studies within the Asian context have been for instance published for Pakistan by Ali T.S., Rizvi S.N. (2010), for India by Dasgupta A., Sarkar M. (2008) and Thakre S. B. et al. (2011), for Malaysia by Lee L. K. (2006), and a cross-national study by Mahon T., Fernandes M. (2010). The before mentioned study by Long L. from 2012 (Bolivia) is the only available publication from the region of Central- and South America so far.

[44] Cf. Unicef 2012: 12 f., Haver J. et al. 2013.
[45] Unicef 2012: 13.
[46] Cf. Unicef 2012: 14, Fehr A. et al. 2013.
[47] Unicef 2012: 15.
[48] Cf. Croft T., Fischer J. 2012: 16 ff.

Also in 2012, WaterAid in cooperation with 16 practitioners and researchers released the most comprehensive publication available on Menstrual Hygiene Management. This publication offers a broad resource and practical guidance for the improvement of menstrual hygiene in lower- and middle-income countries. The authors acknowledge that there is a wealth on practical experiences, but a gap of knowledge about improved menstrual hygiene and its impacts. They therefore recommend further documentation and research on 'the impact of improved menstrual hygiene on educational retention and achievement.'[49]

Sumpter and Torondel's 'Systematic Review of the Health and Social Effects of Menstrual Hygiene Management', also published in 2012, identified 14 appropriate articles that investigated the effects of improved MHM. On the one hand the authors acknowledge how educational interventions could improve MH practises and reduce social restrictions. On the other hand they could not examine a quantitative evidence of the reduction of school absenteeism. They underline their statement by saying that 'there is a gap in the evidence for high quality randomised intervention studies which combine hardware and software interventions, in particular for better understanding the nuanced effect improving MHM may have on girls' attendance at school.'[50] This is mainly due to the lack of appropriate studies as they could take only one published study into account which investigated school attendance in quantitative matters.[51]

4.2. Identification of research gaps

This overview of literature demonstrates the range of studies that have investigated menstruation related challenges for girls in Africa and Asia. The studies illustrate how these challenges can have diverse impacts on different areas of their lives and in particular on their schooling. Further research with a focus on Central- and South America is still needed. It is especially crucial whether the lack of MHM in this region is an issue or not. If so, investigations on the specific difficulties of the region are needed.

[49] House S., Mahon T., Cavill, S. 2012: 180.
[50] Sumpter C., Torondel, B. 2013: 1.
[51] Cf. ibid: 13 f.

Furthermore, what is missing is an understanding of the impact the solutions have regarding the identified problems. There is a need for evidence that these solutions indeed have positive effects, especially with respect to school attendance. Previously, it was acknowledged that temporary school absenteeism among adolescent girls' is an obstacle to overcome for achieving equality in education. Lacking MHM in turn was identified as one reason for this absenteeism. Hence, there is a need for research on the impact of improved MHM on school attendance to achieve the overall aim of equality in education.

Even though WaterAid published a quite comprehensive publication on practical guidelines for MHM in general, there is no source available which determines those interventions that are particularly important for an improvement in school attendance.

5. Research Design

5.1. Aim and objectives

Based on the findings of the literature review, a lack of knowledge was identified about interventions that reduce menstruation related school absenteeism. This research gap could be filled by a comprehensive cross-national quantitative field study which would investigate the nuanced impacts of different types of MHM-interventions on girls' school attendance. However, aspects like feasibility and resources had to be considered which limited the possibilities of this research. Due to the lack of literature, the number of conducted studies for reference is limited. The lack of financial allowance and time did not allow the execution of a dedicated large-scale field study. Therefore, it was decided to limit the research question on a fraction and is stated as the following:

'What are factors of success for Menstrual Hygiene Management-projects in low and lower-middle income countries in order to improve school attendance among adolescent girls?'

This master thesis therefore examines MHM-projects which aim at achieving a higher attendance in school. It targets the identification of factors that contribute to success and failure of menstrual hygiene projects. These factors can be used as a baseline for the execution of a larger survey to verify their impact.

5.2. Methodology of the scientific approach

As mentioned before, this field of research has been newly developed and therefore literature and information on the specific research question are rare. This indicates the impossibility to apply a quantitative approach because the number of already available cases is insufficient. Furthermore, the research question aims at the identification of key factors of success for menstrual hygiene programmes. This implies that new information has to be generated in order to answer the research question and to be able to name 'factors'.[52] Thus, it was decided to investigate the few available cases in depth. The findings of these case studies constitute a meaningful database. A dedicated re-

[52] Cf. Flick U., V. Kardorff, E.; Steinke, I. 2003: 20 ff.

search based on expert interviews would complement the findings.[53] Based on the analysis and the findings of the case studies as well as interviews, new hypothesis will be generated.

5.2.1. Analysis of scientific case studies

A first step of the research was to identify scientific case studies that analyse the correlation between MHM and school attendance. The most similar systems method was applied bringing about the need for case studies which were quite similar in their project design but differ in the outcomes. The observed difference in the outcome (dependent variable) is to be explained by the independent variable.[54] Therefore, case studies had to meet the criteria that they a.) conduct similar interventions on MHM and b.) measure the effect on school attendance of girls in quantitative manners. The case studies were identified through literature research in scientific journals and on the internet. Four case studies which had a similar project design could be descried. All case studies carried out interventions towards an improvement of menstrual hygiene and investigated a measurable impact on the school attendance of girls. At that time, there were no other studies available which met the above mentioned criteria and thus those four were included in the research.

The case studies have a comprehensive and scientific character with detailed descriptions about their methodology and considerable analysis. Three of them have been published in scientific journals.[55] The fourth case study was developed by a collaboration of FAWE (Forum for African Women Educationalists), UNICEF and Proctor and Gamble. The case studies were published during 2008 and 2012. A detailed analysis of the case studies can be found in chapter 6.1.

During the analysis of the case studies additional questions appeared. These questions have been answered by the use of expert knowledge gathered in the form of personal interviews. The author makes use of that additional source of information in order to

[53] Cf. Hussy W., Schreier M., Echterhoff G. 2009: 9.
[54] Cf. Jahn D. 2013: 236 ff.
[55] See 6.1, page 25.

comprehensively answer the research question while taking into account relevant aspects which had emerged from the analysis of the case studies.

5.2.2. Execution of interviews

During the former literature review it became clear that there is a range of projects that aim at the improvement of menstrual health among adolescents. However, the impact of respective interventions on school attendance has not been proven with quantitative methods yet. Then again, the projects report their achievements with anecdotal evidence and share valuable practical experiences. According to Gläser and Laudel, guided interviews are especially useful when a research aims at investigating different themes which cannot be answered by the interviewee itself but rather by the broader research. Furthermore they are suitable for the collection of data on very specific and new aspects.[56] Hence, it was decided to conduct qualitative guided interviews with experts from the field of work, as this is the most suitable way in order to gather as much high qualitative information as possible.

5.2.2.1. Sampling

The author is aware of the fact that all types of stakeholders should be approached in order to maximise the explanatory power. This would include project managers, project staff, activists, researchers, participants like ministries of education, headmasters, teachers and relatives and of course beneficiaries like, above all, female students. All of them need to be seen as experts as they are equipped with special and valuable knowledge, according to the position they have.[57] However, to cover all of them in order to reach a significant quantity would have exceeded the frame of this thesis. Furthermore, field research was precluded and the circumstances for Skype-interviews with participants or beneficiaries are not favourable. Thus, it was agreed to focus on researchers and activists as they are the ones most probably to be accessible.

Researchers are defined in this study as persons who have carried out scientific research in the context of MHM in school environment and who hold an academic degree. Activ-

[56] Cf. Gläser J, Laudel G. 2010: 112.
[57] Cf. ibid: 11 ff.

ists are persons of interest who have either conducted own projects with a MHM component, who work in the field of MHM in other means or who are doing advocacy in the field of MHM.

In order to make sure that the interviewees come from different backgrounds to increase the range of experience they have, different ways of requesting them were chosen.

First of all, the authors of the before mentioned scientific case studies were contacted in order to answer the questions which appeared during the analysis. Two researchers agreed on an interview.

Afterwards, WASH United as the secretary of the 'Menstrual Hygiene Day'[58] was contacted. The organisation regularly sends newsletter to 170 partners around the world who are all working on MHM. An appeal to share experiences and get in contact with the researcher was included in the latest newsletter.[59] The advantage of this approach was that particularly MHM practitioners from the field could be reached. Two interviews with activists resulted from this procedure.

Another appeal was published in the SuSanA[60] forum within a special division which focusses on MHM only. The post was seen by more than 500 persons but only a few replied.

In addition to those appeals, own investigations for experts were pursued. Therefore internet research was executed in order to find suitable projects. Two activists could be convinced in that way.

On 29th of October 2014, the '3rd Annual Virtual Menstrual Hygiene Management in WASH in Schools', organised by UNICEF and the Columbia University, was held in

[58] An initiative, founded in 2014 by WASH United, which 'serves as a neutral platform to bring together individuals, organisations, social businesses and the media to create a united and strong voice for women and girls around the world, helping to break the silence around menstrual hygiene management.' Cf. http://menstrualhygieneday.org/faq-4/menstrual-hygiene-day/

[59] Cf. http://us6.campaign-archive1.com/?u=688f521ff208cdfdce6a49839&id=fe05b1ab38&e=a39dbb2c07

[60] 'SuSanA is an open international alliance' with currently 231 members 'who are dedicated to understanding viable and sustainable sanitation solutions' for which GIZ is carrying out the secretariat function. Cf. http://www.susana.org/en/

New York. The researcher took virtually part in this conference and contacted various suitable speakers (researchers as well as activists) after the conference. Unfortunately none of them could be convinced.

Whenever conducting an interview the interviewee was asked for further contacts. One more researcher and one more activist could thus be won for an interview.

All in all, 19 persons of interests were identified as suitable interview partners. Of these six activists and two researchers working in the field of MHM could be convinced to conduct an interview. All interviewed experts were female, which has to be admitted is not gender balanced but might be allegeable with the particular theme of menstruation. During the search for experts only two male persons could be identified who either declined or did not respond to the request.

The sampling also strived at a heterogeneous background of experts concerning their regional focus. This was achieved by generating experts with practical experience from South Asia (India and Nepal) and various African countries (Uganda, Kenya, Tanzania, Niger). As mentioned in chapter 4, Menstrual Hygiene Management as area of work is presently widespread in Sub-Saharan Africa and South Asia but not (yet) in other regions of the world. As a consequence, it was not possible to include experts with other regional foci than those.

An overview about the persons interviewed can be found at annex 3 page 74 and a detailed description of them in chapter 6.2.

5.2.2.2. Development of interview guideline

Because knowledge on the specific research question is quite rare it became clear that guided interviews would be most suitable for gaining specific and detailed information related to the research question. Therefore the questions were formulated as open as possible to ensure the principle of openness, but as closed as necessary to ensure the comprehensibleness.[61] In comparison to closed questions which are more suitable to

[61] Cf. Gläser J, Laudel G. 2010: 131.

verify existing hypotheses[62], open question give interviewees the opportunity to choose in which extent and in which manner (s)he wants to answer the question and therefore foster new aspects and findings.

In case the selected experts vary in their role it is advisable to develop different interview guidelines for each group of experts.[63] This could for example be the case when various people participate in a project in different roles (for example teacher and student) and therefore acquire knowledge and perspectives. Hence, two different kinds of interview guidelines were developed: one for researchers and one for activists. The structure of the interview guideline complies with the recommendations of Hennink et al.[64]

Firstly, the interview guideline for the researchers was developed. The first part (question 1 and 2) contains opening questions where background information was requested in order to smoothly open the discussion and to be able to appraise the experience of the expert. The second part (questions 2 – 8) contains questions which were designed to gather information on factors of success and hampering factors for menstrual hygiene projects as well as for school attendance. Different kinds of questions were therefore asked to ensure that the topic is examined from different perspectives. The analysis of the scientific case studies educed aspects which gave a connecting point to extend the questionnaire. Questions 9 – 11 thus aim at elucidating these aspects from another point of view from different experts. By facing them with the findings of the case studies, they could give their opinions towards it and compare them with their personal findings. Question 12 serves as additional and closing question.

This interview guideline was pre-tested. No obstacle occurred and the questions were understood. It was also possible to conduct the interview in the scheduled timeframe (30 - 45 min), with the tendency that more questions could have been included without expanding the timeframe. Therefore, in a second step the interview guideline for the activists was, based on the one for researchers, developed. Both guidelines are quite similar,

[62] Cf. Atteslander P. 2006: 139.
[63] Cf. Gläser J, Laudel G. 2010: 117.
[64] Hennink, Hutter, Bailey 2011: 112 ff.

but the one for activists was extended with questions about a definition of 'successful MHM-project', lessons they learned from former projects and aspects like sustainability. The sub questions were not official questions, but rather comprehension questions, used in the case the interviewee did not understand the question, its purpose and the theme behind it.

The interview guidelines for researchers can be found in annex 4 and for activists in annex 5.

5.2.2.3. Planning and execution of interviews

At a quite early stage of the research it emerged that the implementation of additional interviews was necessary. Therefore, the acquisition of interview partners was a continuous progress, going along with literature review and analysis of the identified case studies. While planning the interviews it became clear that it was most feasible to conduct interviews via Skype. This gave the researcher the opportunity to also contact persons of interest which were not situated in Germany. This, on the one hand, extended the range of persons of interest. On the other hand, it was necessary to consider time differences during the arrangement of meetings. This required flexibility from both sides but was no limiting factor in the sense that interviews could not be conducted. Another advantage of Skype interviews was that the scheduled time for the interview was more precise and easier to be kept than for example personal interviews. On the other hand a conservation via Skype is compared to personal conservations limited in the possibility of drawing information from personal behaviour because facial expressions and gestures are missing or at least not as easy recognizable. Furthermore, the quality of a conversation concerning the actual sound and intelligibility is sometimes a limiting factor. Some interviews were interrupted due to problems with the internet connectivity. All in all, the procedure was still very satisfying.

The interviews were recorded and transcribed to make them accessible and traceable.[65] The transcripts have been developed according to Hussy, Schreier and Echterhoff, 2009

[65] The software 'Express Scribe' was used for transcription to allow the researcher to adopt the speed of the speech and also to rewind if necessary.

and Kowall and O'Connal, 2003. Concerning the completeness of the content it has been stated that transcribing a complete interview, instead of only selected text passages, would increase the comprehensibility of the study. The risk of losing information because only those parts which seem to be 'relevant' in the researcher's point of view can therefore be minimized.[66] An exception was partly made for passages which were clearly not related to the research question like introductions from the interviewer's side or final greetings. Concerning the transcription of behavioural expressions it was stated in the literature that the decision whether to transcribe them or not depends on the research question.[67] It was thus decided not to transcribe prosodic characteristics, paralinguistic features and non-verbal expressions as they are not relevant for answering the research question. This decision was supported by the assumption that the interviewees are less affected by personal feelings than other stakeholders such as girls in the analysed regions, since they are not personally concerned with problems regarding menstrual hygiene. Exceptions from this standard, however, were made for laughing to ensure that irony or jokes can be identified and for breaks to ensure that potential doubts and uncertainty can be determined. Informal language and linguistic mistakes were not adjusted. When using direct quotations from the interviews, the insertion of words was accepted to improve readability. These insertions are clearly marked in the text. An overview about the employed notations can be found at annex 6 page 80. The transcripts can be made available on request.

5.2.2.4. Analysis of interviews

In the next step, the interviews were categorized by the help of the software programme MAXQDA. The necessary coding system was inductively-deductively developed. A first coding system was developed by reviewing the interview transcripts. During the process of categorizing further codes were added or adjusted if necessary. For each interview the same code system has been used. Each code was assigned a colour to ensure clarity and to make the process of coding easier. To achieve a logical system behind the colours conductive aspects (key factors of success) were coloured green, whereas adverse aspects (hampering factors) were given the colour red. It was strived to categorize

[66] Cf. Hussy W., Schreier M., Echterhoff G. 2009: 236.
[67] Cf. Kowal S., O'Connel D. 2003: 439.

all parts of the documents to ensure that all information was captured. In the case aspects were not relevant for answering the research question the category 'other' was selected. Sub-codes were assigned to the same colour.[68]

The types of codes that have been developed are so-called thematic codes, in the sense that the selected paragraphs or phrases refer to the context of the selected code but not necessarily to an affirmative fact (like fact codes).[69] Therefore, the codes are not mutually exclusive. This approach was affirmed by the interviewees because they often mentioned for example how holistic 'education' has to be taken up to be successful.

Transcripts were generally coded passage or sentence wise. Exceptions were made for lists or objections parenthesized. Questions were generally not coded except for the case that the given answer was insufficient or too short to be understood if not knowing the question.

[68] Please see annex 7 page 81 for the complete coding system including sub-codes and annex 9 page 92 for the coloured code system.
[69] Cf. Kuckarzt U. 2010: 61.

6. Analysis

6.1. Summary of the case studies

The following section will summarise the scientific case studies. The order in which they are presented does not imply any valuation or preference.

6.1.1. FAWE: Report on the impact of feminine hygiene on girls participation in education in Kenya

This case study was conducted by UNICEF, Proctor and Gamble and published by FAWE. The study took place in Kenya in 2007 / 2008 and was carried out in three phases. 12 schools from a slum area in Kenya's capital Nairobi and from Garissa, an economically disadvantaged region, were included in the study. During the first phase a needs assessment was conducted. Therefore, interviews with girls, parents and teachers and a questionnaire survey with girls were conducted. The findings showed that there was a need for improving the menstrual hygiene as girls were using, amongst others, unhygienic materials and teachers reported behaviour change and absenteeism during menstrual days. In a second step ten schools (664 girls) were randomly assigned to 'intervention' and 'control' schools. The teachers as well as the girls from the intervention schools took part in the interventional programme (phase 2) which contained several steps. Firstly, the teachers took part in a training for trainers in which they were taught in gender responsive pedagogy and puberty education. This knowledge was then applied to their students who were educated about physical and emotional aspects of puberty and skilled to manage menstruation hygienically. Therefore, they were supplied with sanitary towels which were sufficient for two months. The control group did not receive any intervention. During the third phase a follow up survey was conducted. In this survey girls of the intervention group as well as control group were asked about their attitudes towards menstruation and participation and attendance in school. A comparison between the intervention group and the control group as well as between the girls from Nairobi and the girls from Garissa was drawn. The findings clearly announced a positive impact of the interventional programme on knowledge, self-esteem and ability to manage menstruation. Further, a significant reduction of school absenteeism among the girls of the intervention group was found. Whereas girls of the interven-

tion group missed in average only 1.2 days, girls of the control group missed 4.9 days.[70] 77.9% of the intervention group did not miss school at all, whereas for the control group it was only 25.1%. All figures relate to the two months of interventional phase.[71]

A disparity concerning the school absenteeism between the girls from Nairobi and Garissa was in addition noticed. Girls from Garissa tend to miss school more often during menstruation than girls from Nairobi. The researchers hence argue that the region where girls come from determines whether they will attend school during menstruation or not.[72] Then again, the report mentions that female genital mutilation (FGM) is widely practised in the Garissa region.[73] This practise affects girls in several ways and can potentially also impact a girl's well-being and her ability to handle menstruation. Thus, it is an assumption by the author that FGM impacts the girls' ability to attend school rather than the region itself.

Overall, by considering the quantitative results of this case study it can be seen as a strong indicator that the interventions on MHM, even though a disparity in the region was observed, lead to an improvement in school attendance.

6.1.2. Wilson, Emily et al.: Report on the development of an acceptable and replicable menstrual hygiene intervention

The case study of Emily Wilson, Josephine Reeve and Alice Pitt summarises a pilot project which took place in Kenya in 2011. The research design was quite similar to the FAWE study and contained a three phase approach with a baseline study, interventional phase and a follow up survey. The study took place in the Nyanza province and included 302 girls from ten schools which were selected by the local project partner. During the baseline study girls reported about their current hygiene practises and also about their school attendance which pointed to the need for improved MHM. Again, the schools were randomly assigned to be 'intervention' or 'control' schools. The girls from the intervention schools took part in a three hours workshop where they received a

[70] Cf. FAWE 2009: 59.
[71] Cf. ibid: 52.
[72] Cf. ibid: 54.
[73] Cf. ibid: 24.

Mwezi kit (cotton, plastic, towel, press studs, needle, thread) and were taught about the production and maintenance of a Mwezi pad (reusable sanitary pad produced from local resources). The workshop also included some educational aspects about menstruation itself but rather focussed on the provision of a self-made sanitary pad. The control group did not receive any intervention. Four weeks after the course the follow up survey took place which investigated school absenteeism during the last month and the acceptability of the pad.[74] The analysis shows a trend towards reduced absenteeism as the 'number of days missed during one month' decreased by 1.48 days when comparing intervention and control group.[75] This indicates a reduction of absenteeism by 68.8% for the intervention group. Apparently, the number of missed days due to menstruation decreased in both groups, whereas the share for the intervention group was higher. Those girls reported on average 1.43 days missed at baseline and 1.04 at follow up. The control group reported on average of 1.88 days at baseline and 1.59 days at follow up. Furthermore, the replies to the question 'How often does menstruation make you miss school?' indicate an increase for 'never' and a decrease for 'several times'. This again applies to both groups.

The researcher acknowledges that the findings are, due to the small number of participants and clusters, not significant and that they have to be interpreted as preliminary results.[76] Still, this case study shows a trend towards increased school attendance among adolescent girls, due to interventions on MHM.

6.1.3. Montgomery, Paul et al.: Report on a pilot study about sanitary pad interventions for girls' education in Ghana

This case study was conducted in 2008/2009 in Ghana during a period of five months. Three peri-urban villages in the central region and one village in the rural Ashanti region were included in the study. The participating schools were selected by a local project partner. During the first phase a feasibility study was carried out. About 200 individuals took part in individual interviews, focus group discussions and community

[74] Cf. Wilson E., Reeve J., Pitt A. 2012: 69 ff.
[75] Cf. ibid: 73.
[76] Cf. ibid: 74.

meetings, in order to investigate knowledge, beliefs, practises and infrastructure conditions. The analysis of the data came to the result that 95.2% of rural and 20.2% of peri-urban school girls had missed school due to menstruation. Furthermore, most rural girls had no experiences with sanitary pads. During the second phase 120 girls between 12 and 18 received different kinds of interventions. The four villages (n=4)[77] were randomly assigned to 'intervention 1', 'intervention 2' and 'control' group. Intervention group 1 (n=2) received education and sanitary items. Intervention group 2 (n=1) received only education and the control group (n=1) did not receive any intervention. The educational programme consisted of a training session which was held during school hours with groups of 15 – 20 girls in their local language and focussed on aspects such as the development of secondary sex characteristics, the biological process of menstruation, pregnancy, hygiene and menses management. The intervention group 1 additionally received sanitary items in form of underwear and 12 sanitary pads per months. Those girls were asked to keep a diary on their school attendance as well as the pad use. The schools were also asked to record the school attendance of girls for 2.5 school terms (=162 school days).[78] The researchers compared the records of the school with the actual attendance of girls and found a strong reliability of the data. A midpoint evaluation was conducted after three months and a post-intervention evaluation after five months. The researchers analysed the data with the key outcome of school attendance. For the intervention group 1 it was found that the school attendance increased by 9%, which corresponds to an averaged number of six school days of the whole period of time.[79] For the intervention group 2 that received only education a small increase in school attendance (+ 1.32%) was reported at the midpoint evaluation. However, at the post-intervention evaluation their attendance increased to a similar level as intervention group 1. So there was a delayed effect but the overall effect was as high as for intervention group 1. The researchers explain this as follows:

'At a proximal level, it may be that the education component is the active ingredient across both interventions. Providing the girls with information and allowing discussion of this taboo subject may address factors at the interpersonal level of the ecological

[77] n= number of schools.
[78] Cf. Montgomery et al. 2012: 2 ff.
[79] Cf. ibid: 4.

model such as management of cloth materials that enabled girls to better manage their periods, which perhaps resulted in increased school attendance. Alternatively, we may speculate that educating the girls in groups on this topic fostered improved peer and other relations making the school environment more supportive and in turn delivering the results presented here.' [80]

The researchers further found that girls from the rural area benefit from the intervention as much as the girls from the peri-urban area. Thus, they argue that cultural aspects impact more than geographical aspects.[81] This line of arguing is in parts converse to the findings of the FAWE case study and need to be further researched. For the control group the school attendance declined by around 4.42% over the period of five months, even though the absolute cumulated number of 'school days missed' remained the same (12.4 days). The study does not provide an explanation for this finding.

To sum up, the case study quantitatively demonstrates that interventions on menstrual hygiene management raise the school attendance of adolescent girls.

6.1.4. Oster, Emily et al.: Report on randomized evaluation of menstruation, sanitary products and school attendance in Nepal

Emily Oster and Rebecca Thornton conducted another case study during 2006 and 2008 in Nepal, in which four schools within the Chitwan district (two peri-urban and two rural schools) took part. 198 girls from grade 7th and 8th and their mothers took part in the first phase of their study which again was a baseline study on demographics, schooling and menstruation. The quantitative analysis found that 98% of the girls used menstrual cloth, made out of old saris, for sanitary protection. Afterwards 25 girls of each school were randomly selected as an intervention group. Those girls were supplied with a menstrual cup and also educated about the usage of it. The rest of the girls were assigned to a control group and did not receive any intervention. All participants received booklets and diaries for each month. They were asked to note the start and the end of

[80] Montgomery et al. 2012: 6.
[81] Cf. ibid: 6.

their period for each month and record their school attendance for the first six days of a month.[82]

After one year the analysis and follow up survey took place. One aim of the study was to identify the actual correlation between school absenteeism and school attendance. Furthermore, it was the aim to investigate the impact of modern sanitary technology on school attendance.

The investigation showed that the control group attended school on 85.7% of the non-menstruation days and 83.0% of the menstruation days (the days they were on their period). This implies that those girls miss 0.19% of school due to menstruation which values to 0.35 schooldays, within a 180 day school year.[83] Therefore, they argue that in the Nepalese context menstruation has a very small impact on a girl's school attendance. The actual need for interventions on menstrual hygiene management in order to reduce the absenteeism was thus not given in the observed district. Still they evaluated the impact the menstrual cup had on the attendance, which was also a challenge because after six months only 60% of the girls reported using it. The overall finding was that the intervention did not have any impact on attendance.[84]

6.2. Summary of the conducted interviews

The following paragraph will shortly introduce the experts which have been interviewed and summarise their main statements.

Aunna Wilson is co-founder and co-executive director of the Indian organisation Pasand. Pasand was founded in 2012 and focuses on education about MHM. Therefore, an interactive, discussion based curriculum that focuses on female anatomy, health and hygiene and empowerment of girls, is sold to schools and NGOs. Education plays an important role in Pasands' work and is mentioned several times as key factor of success, especially if it involves communities, men, boys and mothers. A knowledge gain that

[82] Cf. Oster E., Thornton R. 2010: 4 f.
[83] Cf. ibid: 6.
[84] Cf. ibid: 6.

leads to behaviour change and improved hygiene practises is mentioned as a favourable target that successful MHM-projects should achieve.

Elizabeth Ross is co-founder and director of the Kasiisi project in Uganda. The main aim of the organisation is the protection of the Kibale National Park. The organisation follows the approach of providing education to students living in and near the national park in order to increase their future job opportunities so that they do not depend on the forest as a source of income but instead are able to follow alternative opportunities. In order to reach that aim a reasonable school attendance and school performance are needed and therefore the MHM-programme was introduced.

Eva Brandt works as sales manager for the German company 'Ruby Cup' that collaborates with NGOs in East Africa especially Kenya, Tanzania and Uganda. The organisation promotes educational programmes through local trainers and the provision of menstrual cups through a 'Buy One - Give One'- initiative. To ensure the sustainability of the projects behaviour change and improved hygiene practise are stated as favourable aspects.

Joanne Nakakawa Hampson was born and grew up in rural Uganda. She is now freelancer for 'IRISE International' and especially contributed to the research by her personal experiences during her childhood and adolescence. In her point of view knowledge gain and empowerment of youth are essential for a MHM-project that is long-lasting while not creating new dependencies.

Ola Perczynska is programme coordinator of the programme 'Her Turn' which was founded in 2012. The programme includes four-weeks educational and empowerment workshops to rural communities in Nepal. It tackles issues such as girl specific health, hygiene and safety issues and furthermore fosters the development of support structures so that common problems like child marriage, domestic violence and human trafficking can be minimised. Just like most of the other activists she mentions knowledge gain, behaviour change, improved sanitary items and infrastructure as components that should be achieved by MHM-projects. In addition she stresses the importance of institutionalisation of MHM-projects.

Emily Wilson is chair at Irise International, honorary research fellow at the University of Sheffield and researcher at the Kampala International University. She has been working on MHM since 2011 when she evaluated a school project for a charity and came to the result that menstrual hygiene was a concern to the girls there. She further researched on the impact of MHM on school attendance and women's self-esteem in Kenya and is currently involved in another study which takes place in Uganda.

Maria Hyttel is co-founder and board member of WoMena, a Danish consultancy that offers services for NGOs, governments and research institutions in Africa and with African issues.[85] In 2010, the organisation started with a research related to family planning and menstrual cups which Maria Hyttel conducted. She is now based in Niger being responsible for technology innovations and qualitative research methods.

Annex 10 on page 92 provides a visual overview about the general contents of the interviews. With the help of MAXQDA a document portrait for each interview was generated. By means of the colours one can recognize which aspects the interview has covered and to which proportion.

6.3. Analysis: Do MHM-interventions lead to higher school attendance?

The analysis of the four case studies shows that, if a need was given, interventions on menstrual hygiene management have an effect on school attendance of school girls. In three of the four cases a need for improving the menstrual hygiene management was observed, based on the findings that girls were missing school due to menstruation. Those three projects reported a reduction of absenteeism after the conduction of the measures but could not completely eradicate it. The fourth case examined the correlation between school absenteeism and menstruation, but could not prove any. Since they did not detect the need for improving the menstrual hygiene, consequently, their MHM-interventions did not show any effect.

The results from the case studies of FAWE, Wilson and Montgomery show that different interventions, namely education, supply of sanitary items and the combination of

[85] Cf. http://www.womena.dk/WoMena/WoMena.html

both lead to an increase of school attendance to different degrees. However, a quantitative analysis which intervention leads to the 'highest outcome' is due to the small number of cases not possible. Also, due to the lack of access to the actual used educational materials and curriculums, it cannot be ruled out that the education given varied in quality and in that way impacted the outcome. Furthermore, the schools in which the case studies took place varied in their sanitary infrastructure. In some schools sanitary facilities were available, although sometimes in bad condition, while other schools neither had toilets nor washing facilities. Furthermore, the interventions conducted did not aim at bettering the sanitary infrastructure and hence the effect of such an intervention could not be investigated. Still, a very interesting point which Montgomery found out is that an education programme alone leads, even if delayed, to a similar increase of school attendance as education in combination with the supply of sanitary items. This finding points out the importance of education.

6.4. Analysis of factors of success

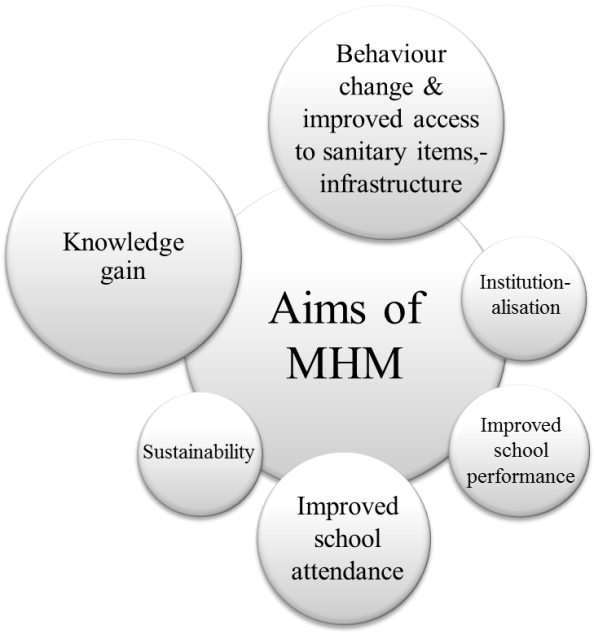
Building on the findings from section 6.3 that proved a correlation between MHM-interventions and an increased school attendance, the following section will analyse the factors of success of MHM-programmes.

The conducted interviews as well as the case studies will serve as source of information. As described in chapter 5.2.2.4 the interviews have been analysed with the help of MAXQDA. The codes used for structuring the interviews will now serve to identify the various factors. It has to be mentioned that the codes are not used in a completely strict manner, because an open methodology in order to fully understand the issue has to be applied. A remark about a 'lessons learned' can for example also be interpreted as a factor of success.

6.4.1. How do we define 'success'?

For defining any factor of success it is firstly necessary to determine what is actually meant by ‚success'. Therefore, the experts have been asked to name aspects which in their point of view should be achieved by a MHM-project. The following responses were given and are described below.

Image 3: Aims of a MHM-project



Source: Own illustration, based on MAXQDA-analysis

Aunna Wilson defines the success of a project in quantitative and qualitative terms. Within her project, data on the girls' level of knowledge, product use and hygiene behaviour is collected in quantitative terms before and after the interventions and then compared. The activist would look upon the project as favourable if a gain in knowledge, improved product use and improved behaviour can be quantitatively demonstrated. She adds that qualitative interviews with different stakeholders help evaluate the success in qualitative terms. This could for example be the reduction of teasing by boys or an increased school attendance. She admits that these are achievements that are only visible in the long run and are thus long-term goals.

Joanne Nakawaka identifies empowerment and knowledge gain as most important factors to make a project successful.

Eva Brandt sees sustainability of the project and behaviour change of the target group as the most desirable aspects. In her point of view this includes the correct and long-term use of a product and an on-going conversation about the topic, even after the end of a project.

Elizabeth Ross lays the focus on a girl's performance in school. She reports about the success of her project: 'our girls are doing better now than our boys' and additionally argues that attendance is a parameter but that it does not stand alone.

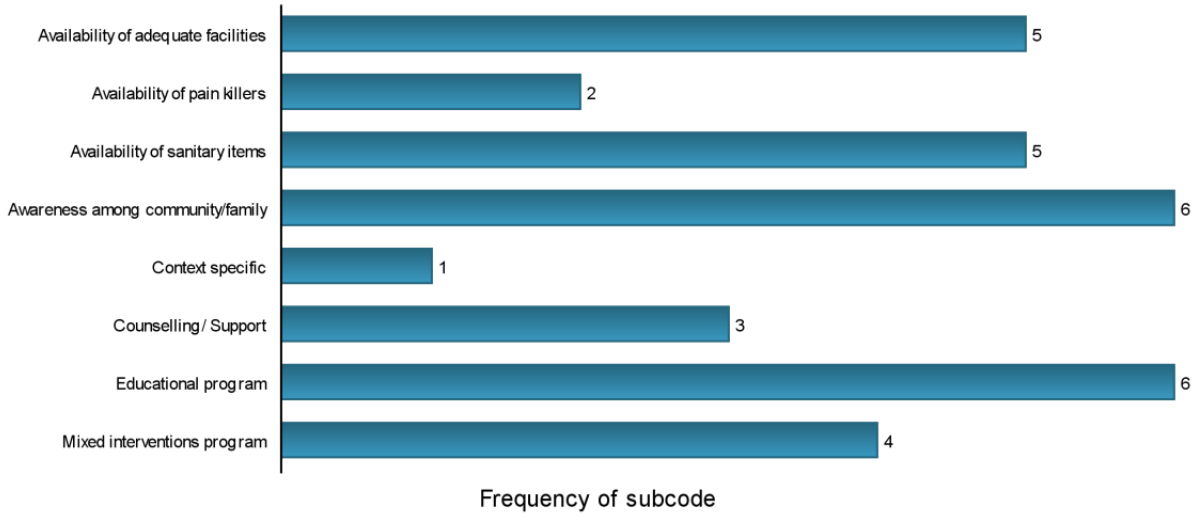
Ola Perczynska says that an ideally successful 'Menstrual Hygiene Project would have to incorporate several elements' and that 'it would have to be very holistic: from infrastructure, from teachers training, from curriculum to sort of workshop.' The institutionalisation of the theme is in her point of view very important to ensure the coverage of different necessities.

Based on these remarks and the literature review, 'factors of success' have been divided into two different kinds. The aim of a menstrual hygiene project in the sense of this study is to improve the school attendance. A focus on influencing aspects that foster the achievement of this goal will be set and therefore *'factors of success for increasing the school attendance'* (short version: factor of success for school attendance) will be analysed. However, in a broader sense, the success of the entire project which lies behind this goal has to be considered, too. This becomes especially interesting when considering sustainability in an environmental as well as long-lasting point of view. For example: even if school attendance has increased due to, for example the provision of pads, the project management needs to consider a long-term solution. Therefore *'factors of success for menstrual hygiene projects'* in general will be identified.

6.4.2. Factors of success for school attendance

This section will identify and explain the factors of success, within the scope of a MHM-project, which are especially relevant for increasing the school attendance among adolescent girls. Therefore, experts have been asked: 'In your opinion, what particularly needs to be done to eradicate school absenteeism due to menstruation?'

Image 4: Factors of success for school attendance



Source: Own illustration, based on MAXQDA-analysis

This frequency table was generated by MAXQDA and visualizes the frequency of each factor of success. To produce this chart, the options 'document' and 'multiple selection' were chosen as unit of analysis.[86] The numbers represent the cumulated frequency of being mentioned by all experts. This is important to avoid biased results and means that if one expert mentioned for example the importance of the educational programme three times, it will still only be counted once. Furthermore, one can in this way demonstrate the importance of the educational programme because six out of the seven experts have mentioned it. This procedure was applied for all of the following frequency tables and accordingly, they have to be interpreted.

Awareness among community/family

Awareness among communities and families were mentioned as a factor of success by most experts.

Eva Brandt picks up the general support of education of girls by saying: 'One has to make sure, that girls receive support from family and community. They need to receive

[86] 'In this case, the calculation will be performed based on the assumption that multiple subcodes can be assigned within a single document, i.e. that subcodes do not exclude each other. MAXQDA calculates the number of documents in which the respective subcode has been assigned. Within individual documents, all assigned subcodes are counted.' Cf. MAXQDA help: Statistic and graphic functions: Frequency Tables and Charts for Subcodes.

appreciation, trust and a social status that acknowledges their right of education and the confidence to know that they can achieve more than their mothers and fathers' (freely translated).[87] Emily Wilson emphasises the special support girls need during menstruation by saying: 'The schools and the boys and the teachers [need to have the knowledge] and [should] try to create an environment where girls are respected and where menstruation isn't a taboo and isn't stigmatised.' Joanne Nakawaka explains how social norms and attitudes can influence a girl: 'The older women or the people say: [..] 'Now you are ready to have children.' [..] Girls want to hide that because they feel forced to get married.' She therefore claims for a constructive way of handling menstruation that does not stigmatise a girl but rather support her. So on the one hand there is *mental support* needed that equips girls with self-confidence. On the other hand *practical support* is essential to be able to handle menstruation. Maria Hyttel points it out as follows: 'The girls also need the support of their family [..] [to] find solutions for something. [..] [They need] privacy to boil it [(referring to a sanitary item)], so it is important to [..] ensure that the girl has the support of family and community.' Aunna Wilson contributes with a positive example from Nepal: 'Even in the most rural area [..] I have talked to girls. If their mothers know the sanitary pads, they know it is important for their daughters. [..] They make budget available for their daughters and for themselves. And even if they have to go to the next town over and buy three months of sanitary pads, they will.'

Those statements indicate that a girl's ability to attend school is influenced by the families' and communities' opinions towards it. Thus, girls need mental and practical guidance.

Educational programme

The second most commonly announced factor of success is an education programme that aims at awareness raising and education of the girls themselves. The following paragraph will focus on the importance of an educational programme in contrast to other

[87] Original passage form the interview: '[Man] müsste [..] gewährleisten, dass die Mädchen von der Familie und der Gemeinschaft, die Anerkennung [..] und das Vertrauen und dieses Status [bekommen], dass es sozusagen ihr natürliches Recht ist Ausbildung zu haben und dass sie ähm mehr können und mehr erreichen können als ihre Mütter und Väter.'

interventions. Because there are overlapping aspects with section 6.4.3, a detailed description of aspects which make an educational programme favourable will follow under the point 'Education and awareness raising'.

Emily Wilson refers to the case study of Montgomery and agrees on the general importance of education: 'I think menstrual health education should be critical. [..] There needs to be more euphuism on education and the impact it can have. I think it all comes down to girls' knowledge.' She furthermore points out the importance of knowledge regarding pain management: 'I think the girls if they [..] [have] the pain, [..] [and] if they understood better what was the cause they would better be able to handle it.'

Aunna Wilson complements: 'The products, they make it happen. It's the education that is a very limiting factor. And mothers and teachers and everyone will report again: 'It's great that my daughter knows about that' and maybe even: 'I want to know about this as well, but I certainly don't want to talk to my daughter about this.' So people don't want to talk about it, even if they have the products. So I think that education is definitely needed.'

Ola Perczynska also urges to raise awareness and knowledge sharing by saying how important it is 'that they know what is happening with their bodies.'

Availability of adequate facilities

The importance of the availability of adequate facilities is mentioned by five experts. The expert from Nepal claims that 'at the very lowest level there have to be toilets.' However, the general consensus of what is really needed are so called 'girl friendly toilets' in which 'girls have a school environment where [..] [they] have privacy to wash and change.'[88] This can be achieved by providing gender separate facilities, privacy, water, soap, trash cans, washing areas and places for drying cloth. Joanne Nakawaka shares experiences from her childhood in Uganda: 'I remembering school [..] sometimes the toilets were are all on one block. [..] We had toilets which were looking towards our school [..] and people could time you and see how long you spent in the bathroom [..] Uganda is really hot and the periods are very uncomfortable]' and thus recommends: 'I

[88] Interview, Emily Wilson, 28.10.2014.

would like to know when I go to school [that] there is a changing room and water. [..] Knowing that after a few hours I can go somewhere and wash and change - that would make me go to school.'

Availability of sanitary items

Five of the experts pointed out that the access to sanitary items constitutes another important parameter. Aunna Wilson says that even 'at the lowest level the girls need to have something that they are not afraid of staining their cloths.' The actual modality of the product itself is generally kept quite open by the experts. Potential technologies are reusable pads, commercial pads, menstrual cups, tampons or even cloth, as long as the technology is safe, comfortable and effective to use and in accordance with the socio-economic context. Joanne Nakawaka, Ola Perczynska and Maria Hyttel suggest promoting those items which can either be self-made or are locally available and/or are reusable. This would empower the people instead of creating new dependencies. Furthermore, reusable products have the potential to reduce environmental impacts. Emily Wilson who has conducted a programme that taught girls to produce their own sanitary pads confesses that this was not the most feasible option.

> *'We found from the study that even though the girls liked the pads, teaching them making the pad wasn't the most feasibly option. A lot of the girls had problems accessing the materials and actually their pads were very different quality. And the girls who were the poorest were often the ones who produced the worst pads. So the ones who needed it the most, were the ones who were least able to access the intervention.* [89]

The discussion with the experts about the suitability of the menstrual cup brought various aspects. On the one hand the ecological advantage due to the reusability of the product up to ten years is approved. However, two experts are concerned that the product might create a dependency, because it needs to be replaced but is currently only manufactured in industrial countries. Another concern is the suitability for young girls and for girls living in regions where the vaginal insertion of a product is culturally not acceptable. The experts who promote those products (Maria Hyttel and Eva Brandt) highlight the health benefits of the product, because it is healthier for the reproductive

[89] Interview, Emily Wilson, 28.10.2014.

tract than for example a tampon. Nevertheless, other experts are concerned in terms of the hygienic use of it, because a minimum of facilities for boiling the product has to be available in order to ensure a safe use of it. Maria Hyttel debilitates the point by saying: 'Our preliminary analysis shows that in terms of the hygiene aspects there are no differences between the intervention and the control group. [..] This would indicate that menstrual cups do not increase the risk of urinal tract infections.'

To summarise, the availability of sanitary items is essential but the promoted product has to be in line with the socio-economic context. Eva Brandt furthermore recommends offering various products so that girls can choose which option is most suitable for them.

When promoting sanitary items the disposal of those that can't be reused has to be considered, too. Emily Wilson reports: 'I have seen projects where the girls were given disposable pads and they ended up littered all over the playground [..] And actually having an incinerator in your school playground isn't that safe.'

Counselling

Joanne Nakawaka suggests offering emotional support for menstruating girls in order to keep them in school. 'Girls should know they are not alone. There was a senior woman at our school and if you had a problem, you went to talk to her. [..] If girls knew they can talk about it, then everyone knows it is not just them. And that would be very helpful.' In this context Eva Brandt values the deployment of staff or mentors who constitute a person of trust and who support girls in critical situations. Elizabeth Ross highlights the educational programme which is attached to the provision of sanitary items in her organisation. Thereby a medical-backup component and peer-education programme are offered to the girls. 'We have a school nurse. [..] She goes beginning of every month [to] meet the girls. She finds out how they are doing, she hands out the pads, she discovers if there are [..] more [..] who started their period, she sits them down she talks about menstrual hygiene and she gives them the pads.' The peer education programme consists of girls who are trained as persons of trust who assist girls in emergencies. 'In our evaluation it was very clear that schools who have those peer educators were the schools where girls were much better informed. And you know they felt much more comfortable about talking about their bodies', says Elizabeth Ross.

Availability of painkillers

Two experts picked up the usage of painkillers during menstruation. However, their explanations mainly aimed at an appropriate education how and when to use those painkillers. Emily Wilson illustrates the case in Uganda: ‘Actually, Paracetamol is quite widely available but there is a lot of barriers to people taking it and the understanding of when the right time is to taking it. Because some girls take antibiotics instead of pain relief because they think they are ill. And that’s actually a quite dangerous practise.’ Joanne Nakawaka supports that point of view by arguing that local believes and myths often hamper girls to take pain relief. ‘When I was younger, people say: ‘This is the gods, they have decided. You are going through this stage, so you can’t interfere with this process. You can’t take painkillers.’

Mixed interventions programme

Four of the experts think that the combination of the above mentioned interventions is a factor of success as well. This means that the measures do not come alone but should be combined with others. For example: A girl who misses school because she is not equipped with sanitary items and is then provided with it, might still miss school if there is no place to change those pads. Elizabeth Ross says: ’I think that we have been particularly successful, because we provide a package that is not just handing out pads [..] we peer it with sexual health education.’

Context specific

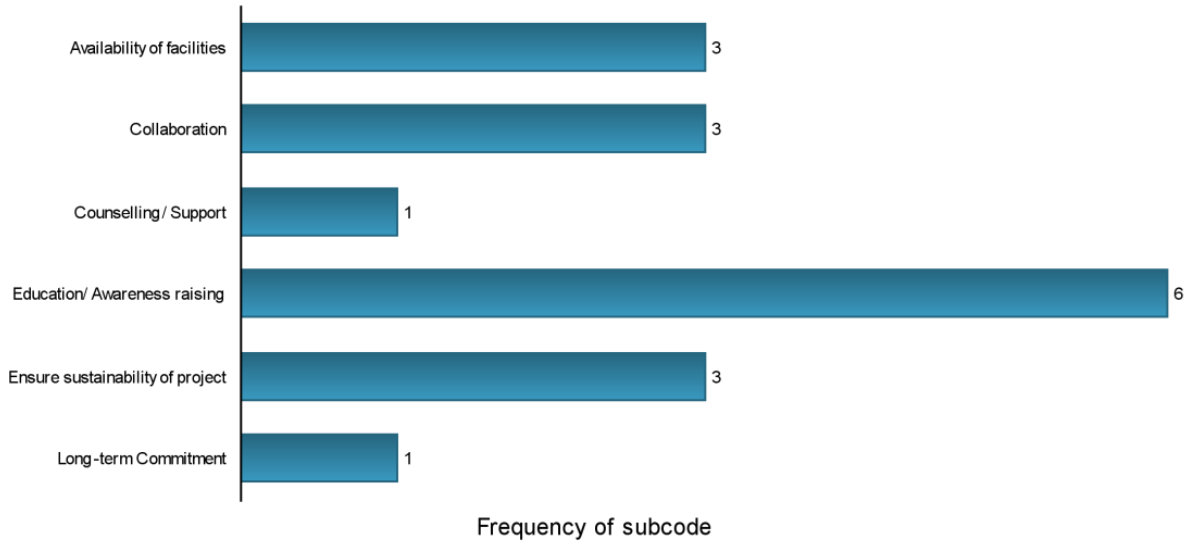
In addition to the above mentioned factors of success, Ola Perczynska argues that such a unique factor of success cannot be defined as such, because it depends very much on the socio-economic context. ‘I think this is probably [..] context specific. Because for example in Sub-Saharan-Africa there are different issues and different norms than there are in Nepal or India for example.’

Even though she was the only expert who gave this answer when asked about factors of success, all of the other experts also picked up the point in the course of the interview, usually when asked about recommendations for other projects. These statements are listed in chapter 6.6 on page 51.

6.4.3. Factors of success for menstrual hygiene projects

To identify factors of success for MHM-projects in general, experts have been asked 'What are key factors of success for MHM-projects?' The following aspects were identified.

Image 5: Factors of success for MHM-projects



Source: Own illustration, based on MAXQDA-analysis

Education and awareness raising

The qualitative representation, generated with MAXQDA, announces education and awareness raising as a factor of success. This aspect was mentioned by six of the interviewees and can be further sub-classified. The ***inclusion of different groups of persons*** was mentioned most frequently. Next to the girls, boys and men, female relatives, older women and teachers should be included in education and awareness raising programmes. Ola Perczynska argues: ‚I think *boys and men* should be equally educated about menstrual hygiene and menstruation in general, just like women and girls.' Joanne Nakawaka agrees: 'Men earn the money, therefore men make the decision where they money goes and sometimes they give money for food at home or school stationary but not for menstrual hygiene. So if men understand the priority or the importance [..], then they would provide money to buy the things the girls need.' Maria Hyttel reported: 'What we found was that the inclusion of boys was important and [we] also found ourselves that it was an important aspect. So now that the boys have been included they

also knew what was going on and they were more supportive and less teasing them [the girls].'

The inclusion of *female relatives and elder* women plays another important role. Aunna Wilson reports the following: 'We have [..] for example [..] a mothers course [and] we want to make sure that the grand mothers and the respected elder women are also invited and that they are coming. Because if they [..] come that shows that they support.' Joanne Nakawaka refers to the special role older women take in some societies: 'Get the older women! Teach the older women as well. Because when girls have this problem, they go to the older women and if the older women don't know how to explain, they will just sort of tell them some theories which are not true.' Maria Hyttel and Eva Brandt also mention the inclusion of female relatives like mothers and sisters and female friends. 'We seemed to notice a difference between the parents who had been to the session, because they were more supportive and trusted this menstrual cup, whereas the parents who didn't come were more kind of sceptical and not so supportive of their daughters using the cup.', reports Maria Hyttel from the experiences she gained when introducing the menstrual cup.

Maria Hyttel and Ola Perczynska refer to the importance of the education and inclusion of *teachers*. Maria Hyttel reports that:

> *'Many teachers, or in Nepal most teachers, are just unprepared. So in our for example training for trainers we discuss it with our trainers [..] and they are also not prepared in the beginning to talk about it, so we have to [..] talk, we have to create an atmosphere where this is a normal subject. So there is nothing to be ashamed of and there is no sickness and there is no stigma around it.'*

Conducting the educational sessions within an ***appropriate atmosphere*** was cited as another aspect. This refers on the one hand to the above mentioned atmosphere around the topic and recommends to 'shift the atmosphere around menstruation from stigma to just a health issue.'[90] On the other hand it refers to the actual atmosphere in which the girls are taught. Eva Brandt suggests conducting educational lessons in a personal atmosphere within an appropriate group size and a suitable timeframe that allows discus-

[90] Interview, Maria Hyttel, 17.11.2014.

sions and the possibility to ask questions. Maria Hyttel also recommends to *teach the girls in a group* because: 'Often when it comes to the cup, because it is a new technology, it takes a while in terms of understanding and trusting that new technology. So we easily found that a few girls are more eager and adventurist and they want to try it immediately and others are more hesitant, so you need to create enough trust in terms of using this cup. [..] And one may have tried it and think it's good and she can share with the other girls.' She furthermore suggest an *early timing of education programmes* by saying to make sure 'that boys but also girls have an early on understanding on it, even before maybe the first girls get their period, because many girls said, that they didn't know what it was when they first time got their period.'

Furthermore, it is advisable to conduct educational sessions *through local partners*. Elizabeth Ross finds the assignment of medical staff advisable: 'I think they trust these nurses, [they] are far enough from them so it's not so embarrassing, they might not want to discuss that stuff with someone who is too close to them but on the other hand they know them and they have that sort of medical pattern [..] that makes them professional.'

While educating and raising the awareness of girls it was suggested by two interviewees to promote the ***empowerment of girls.*** Joanne Nakawaka illustrates by saying: 'If you show someone how to fish you don't have to get a fish every day. Providing them is good but teaching them how to make them [the pads], [..] so they can teach others [..] is better.' Elizabeth Ross considers this approach as useful as well, especially when targeting a sustainable project design that is less dependent on external funding.

Aunna Wilson and Joanne Nakawaka suggest an educational programme which is ***interdisciplinary.***

> *'Try to hit all angles. [..] Once you have started talking about menstruation, it's obviously going to lead to questions like sexual harassment to and to pregnancy and all sort of things. And having a programme, [even if] [..] this specific entity can't touch all of it [..] you have to be prepared to deal with all of these questions. [This] is very successful.'* [91]

[91] Interview Aunna Wilson, 18.11.2014.

She further advises to ***consider environmental*** aspects in the educational programme as well.

Availability of facilities

Being mentioned by three experts, the availability of facilities represents another key factor of success for a menstrual hygiene project. Eva Brandt mentions that a minimum of sanitary facilities has to be available to be able to put the acquired knowledge (and sanitary items) in practise. Elizabeth Ross expands the idea of a minimum of sanitary facilities and recommends the availability of 'girl friendly toilets', which has been explained in section 6.4.2.

Collaboration

Aunna Wilson states that: 'A key factor of success is multiple entities working together. And entities [..] could be anything, from a community to a school, from an NGO, to a government. I think a lot of people talk about working together but there hasn't been a lot of true collaboration.' Collaboration with schools/teachers, men/community leaders, local partners and relatives is announced by three experts. They refer to the involvement of them especially during the planning and implementing process in order to raise feasibility and commitment but also their enrolment in awareness raising. Joanne Nakawaka claims: 'Get the villages involved, get men involved because they make the decisions.' Eva Brandt agrees on that point and furthermore emphasises the importance of collaboration with local partners to avoid proselytization.

Sustainability of project

A sustainable project design was mentioned by three experts and refers on the one hand to environmental aspects. Joanne Nakawaka and Aunna Wilson advocate the usage of local products and materials. Aunna Wilson states: 'I think a truly successful project would be one where you are cognizant about the environmental impact.'

Elizabeth Ross and Joanne Nakawaka on the other hand endorse the empowerment of girls and locals to enable them. Joanne Nakawaka says: 'When people can sort of own and know where things can locally be resourced, that can be a successful project. [..] So people don't depend on you.'

Long-term commitment

The sustainability of a project is linked to a long-term commitment. Emily Wilson argues that:

> *'If we were saying – theoretically - that there is a really positive impact on their [girls] schooling, on their self-esteem, and all those things, we will only see the effect if we commit to a long period of time. And I think a year, is not going to have any long-term impact. You know we are talking about an effect that you will only see through a girl's school career. So if we, organisations, want to give disposable pads they have to commit to a girls school career, until she is able to effort an alternative product. Because otherwise I think you are wasting your money, because you are not going to see any of those impacts.'*

Elisabeth Ross agrees by saying: 'The donors, they have to understand that this is a long-term commitment and that it's going to take years before you actually see an impact. [..] It's long-term, like all education, it's a long-term investment.'

Counselling/ Support

Elizabeth Ross mentioned counselling and support as further factors of success for MHM-projects. However, this aspect rather meets the intention as 'factor of success for school attendance' and was hence explained in chapter 6.4.2.

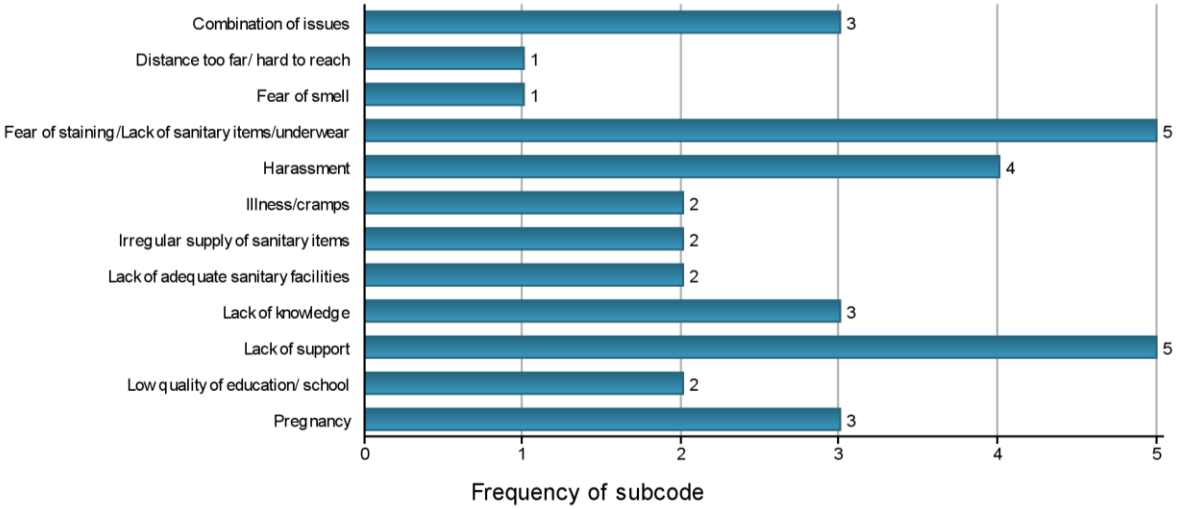
6.5. Analysis of hampering factors

The following section will focus on hampering factors. It is important to identify these aspects as well, because it enlarges the perspective of considerable aspects and thus complements the research. Reasons which are only indirectly associated with menstruation or whose connection to menstruation has not been recognised yet by organisations as such can be revealed and possibly tackled by a MHM-programme. The interviewees have therefore been asked to identify factors which hinder on the one hand girls to attend school and on the other hand the success of a menstrual hygiene project. As these aspects partly overlap, the analysis does not strictly separate the topics, either.

6.5.1. Hampering factors for school attendance

This section illustrates reasons that hamper girls from attending school. The interviewees have therefore been asked: 'How would you explain the fact that girls still miss school even though they are aware of MH and are equipped with necessary infrastructure/ items?' The following answers were given.

Image 6: Hampering factors for school attendance



Source: Own illustration, based on MAXQDA-analysis

Most frequently the **fear of staining and the lack of sanitary items** were mentioned by the experts. One expert mentioned the **fear of smell** which is also caused by the lack of appropriate sanitary items. The **lack of adequate sanitary facilities** and the **irregular supply of items** were mentioned by two experts. The **lack of knowledge** does not have a direct influence on attendance but enables girls to find solutions to handle menstruation. **Cramps** as a consequence of menstruation were stated twice. These are reasons and hampering factors which are clearly associated with menstruation and which have been discussed in detail before. Thus, these aspects will not be further explained here.[92]
The **lack of support** does in parts refer to menstruation, especially when girls need help to acquire sanitary items. However, some experts expanded the thought and refer to the support of girls that promotes their *role in the society* and their equality. According to

[92] Please see 6.4.3 and 6.4.2 for detailed explanations.

the experts, the general discrimination of girls in some societies hampers their enrolment in school or their attendance because they have *other responsibilities*. In some cases menarche is associated with a change of responsibilities which leads to an increasing involvement in house work or the expectation to get married. Aunna Wilson reports: 'Dropping out may be [..] because that's just part of the plan that now you are a women and you need to go into work.' Ola Perczynska reports: 'Most girls drop out of school when they get married.' Both experts from the South-Asian context report that *the taboo and stigmatisation* of menstruation accompanied by *restrictions* potentially hamper girls' attendance and can thus also be associated with the lack of support.

> *'There is still stigma, that's one reason. And another reason [..] [is:] girls are just not allowed to go to school. They are expected to stay at home. Usually it is during their first menstruation they are expected to stay at home, but in some communities where these norms are more strict, they have to stay at home every period.'* [93]

Aunna Wilson with her experiences from India confirms this argument by saying: 'You can come from the most educated family and the wealthiest family and they might [..] still have the taboo related to 'You don't leave your home while you are menstruating'.'

Harassments as a hampering factor can also be associated with lack of support and was stated by four interviewees. According to them, girls have reported that the teasing by boys when they find out they menstruate disturbs them and keeps them absent from school. 'Girls don't come to school because boys tease them. And when they see girls getting their pads, they are going over saying: 'Oh you are getting your biscuits'', reports Elizabeth Ross. Ola Perczynska adds: 'This is one of the reasons why I think boys should be included in menstrual hygiene programmes, so that they understand the process and that they don't bully the girls.' Awareness raising and education should thus be included during a MHM-programme in order to break down myths and restrictions and foster social support.

Elizabeth Ross sees the risk of sexual abuse as another reason why girls don't come to school. In her point of view the way to school in Uganda can be quite dangerous for girls and even when they reach school they might not be safe.

---

[93] Interview: Ola Perczynska, 11.11.2014.

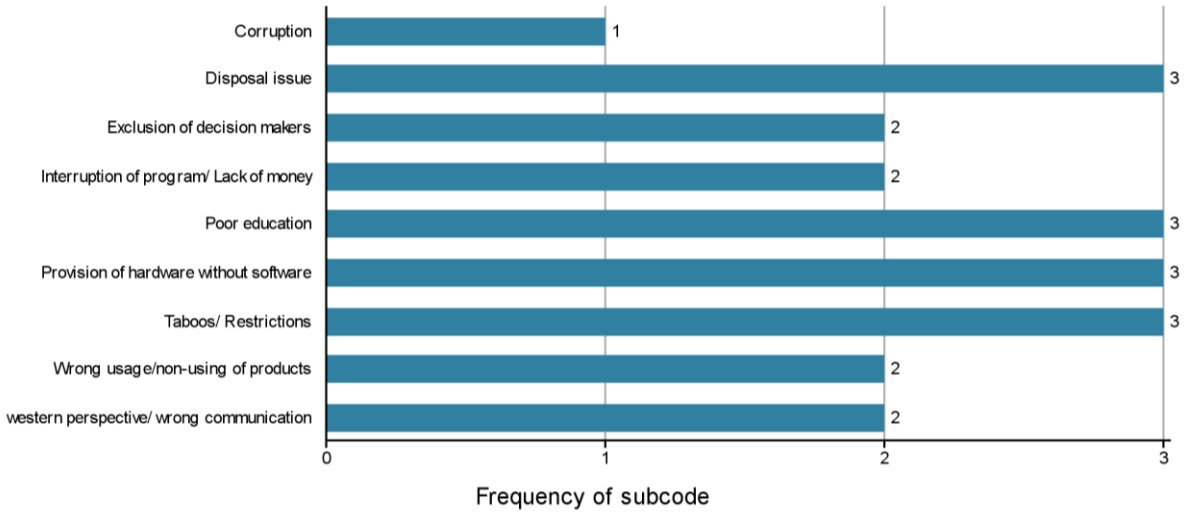
'[There are] people who don't send their children to school because they were afraid that by going to school they would get HIV. And they are not stupid because the HIV rates for teachers are very high. And many teachers will fix your grade in exchange for sex [..] It's dangerous for the girls and so I think it [: the absence] is a combination of not seeing value [and] also feeling protective.'

Pregnancy was stated by three experts as another reason why girls drop out of school. This problem could be tackled by an additional education component within a MHM-project that teaches on reproductive health.

In two interviews the **low quality of the school** was stated as a reason why girls do not attend it and why parents maybe do not encourage them to do so or even discourage them. The **distance to school** is in some cases according to one expert also a hampering factor. However, the development of a functional educational system is very extensive and cannot be covered by MHM-programmes.

6.5.2. Hampering factors for menstrual hygiene projects

Image 7: Hampering factors for MHM-projects



Source: Own illustration, based on MAXQDA-analysis

As mentioned before, when designing a menstrual hygiene project it is advisable that different aspects are combined with each other. Thus, the **neglect of the disposal issue, poor educational programmes,** especially the **provision of hardware without adequate software** which can then lead to **wrong usage or non-usage of the products** are seen as hampering factors for such programmes by many experts.

Ola Perczynska illustrates: ‘Well, I think infrastructure is super important but if there is no soft component where people are trained, it is just a big waste of money unfortunately. [..] Just the fact that you distribute a cup, will not mean that they will use it.’
Aunna Wilson adds how educational programmes are sometimes limited by external factors: ‘There are limits on ability to do a proper education programme. So one is, at least to the companies I talked to here is, when they go into a school, either they are not allowed to bring their product or they don’t feel comfortable to bringing the products because they don’t want to be seen as a sales thing. So they are not able to bring the actual product and show how to use it. [..] And I think, if a girl truly doesn’t know how to use a product and you can’t demonstrate to her with a pair of underwear, it is limiting.’
Eva Brandt as well as Joanne Nakawaka see potentials in the proper education of trainers and teachers and mention how important it is to make sure that they deliver the right messages in the right manner.

In this context **taboos and restrictions** are seen as a limiting factor for menstrual hygiene projects by two more experts. Ola Perczynska reports from Nepal:

> *‘Our workshops are delivered by local women from these communities. We train those women and then they deliver workshops. In some communities it is really hard to find a woman who has not that believe in impurity. [..] So in the very specific context of our problem, if we have trainers who also follow those restrictions [..] perhaps they don’t always deliver the workshop the way we would like that. [..] These trainers will not exactly embody the content ‘This is menstruation, this is healthy, it’s a healthy body function, there is nothing to be ashamed of, there is nothing impure or so.’ If we have a trainer who herself follows these restrictions she will not embody this content.’*

In general, the taboo about menstruation makes it difficult to address issues as well as solutions to the target groups. However, the involvement of different parties is essential as **neglect of decision makers** is, according to Aunna Wilson and Joanne Nakawaka, a hampering factor for a MHM-programme. Joanne Nakawaka demonstrates: ‘Things don’t work when you don’t get the decision makers involved. So if you just go and spend a lot of time with young girls and tell them about all those great projects and how they can have a bit of a menstrual life and then you don’t involve the people who run the school, then everything will be left where you left it.’ On the other hand Aunna Wil-

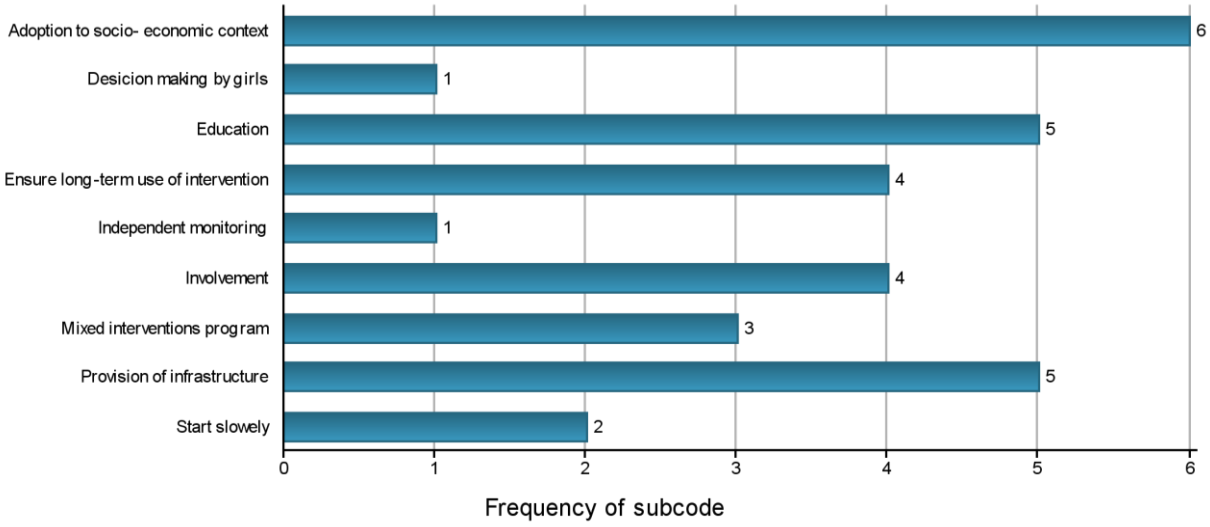
son remarks, that the direct cooperation with schools can at times be difficult. Teachers for example can find it hard to earmark time for additional workshops or lessons because they have to follow their curriculum.

Another obstacle is the sudden **project interruption** due to lack of money or support. Elizabeth Ross explains: 'You have to avoid being an 'on-off', it's no good doing if you are doing it for a year. And it's not fair actually. [..] It's wrong actually.' Emily Wilson adds: 'I [talked] to communities who have [been given] reusable pads and they have been very angry that the project has been withdrawn and it's very difficult to offer an alternative, because the trust is gone.' This counts for other developmental projects as well and is an aspect that has to be considered by organisations in general. A **western perspective** which undermines local norms and values should generally be avoided and one has furthermore to be aware of **corruption** as an adverse phaenomenon.

6.6. Recommendations and lessons learned by the experts

The following section will give an overview about the experts' 'lessons learned' and 'recommendations'. Lessons learned often go hand in hand with suggestions for future activities and are therefore represented jointly. The lessons learned are often mentioned only once as an example from a previous work experience. Therefore, the table of frequency is represented in annex 11 page 94. The following table represents the given recommendations.

Image 8: Recommendations



Source: Own illustration, based on MAXQDA-analysis

The importance of the **adoption to the socio-economic** context in which a project takes place was mentioned by six of the experts and thus constitutes a very important point. Joanne Nakawaka and Eva Brandt mention the importance of a thorough understanding of the culture, the background of a project and a proper needs assessment. Aunna Wilson explicates: 'I think it [the ranking of most effective interventions] entirely depends on the community and the population you are targeting. I think an intervention for mothers is gonna be different to an intervention for girls. I think an intervention in an urban area is different to an intervention in a rural area. And an intervention in the state of Maharashtra is different to in intervention in Karnataka.' Emily Wilson adds: 'We found quite varying local contexts. [..] So for example some areas have a lot of water, some areas don't. A reusable product is much more suitable for an area with a lot of water. At an area with no water a reusable product is probably not very safe because it can't be washed properly.'

Cultural aspects also have to be considered while adopting a programme. Stigmatisation and taboos seem to be, according to Aunna Wilson and Ola Perczynska especially in Nepal and India, challenges for MHM-programmes. Aunna Wilson suggests differentiating between sex- and health education. 'It is very important for us, that we are not known as sex-education. We want to be simply known as women's-empowerment and health education, which is very cheesy but that's how we try to brand ourselves, because sex-education has still a very negative connotation here.'

When adopting a programme to the socio-economic context the **involvement** of school committees, local people and males is indispensable and was recommended by four experts. Maria Hyttel suggests: 'I think it is important to try to have this community involvement, like [when you] develop something new. [..] Try to discuss it with people, with the community, with girls, with the teachers to really have something [that is] not top-down but [..] adapted from the people that you are targeting. However, a culturally acceptable manner of inclusion has to be identified. The educational programme of Pasand for example intends to separate girls and boys in some parts. This is according to Aunna Wilson advisable because in that way girls feel more comfortable and free to discuss things and ask questions.

Eva Brandt finds it helpful to start a project with girls who are already around 13 to 14 years old. In her point of view those *older girls* are more experienced than the very young ones and thus more open minded. It is thus easier to gather information and conduct a proper needs assessment.

Maria Hyttel suggests the usage of already *existing structures and materials*: 'Make sure you use the existing guidelines, so for example UNESCO just published a guideline on menstrual hygiene management. So you use the documents that exist, the knowledge that exists and then of course try to adopt it as much as possible to the concrete programme you want to do. So make sure it fits the actual context.'

Four interviewees said that they would try to **ensure a long-term utilisation of the intervention**. Emily Wilson expresses her opinion: '[A] programme should have sustainability as a priority because actually a solution for a week or a month isn't a solution. It has to be a solution for at least their school career.' This can be achieved by *empowerment* of girls, for example by enabling them to produce products by themselves. Another way would be to *repeat training sessions* or to design the project in a way that ensures that the knowledge is kept in the school, community, region etc.. This can be put into practise by for example educating health workers, the nomination of *persons in charge* or the set-up of a peer education programme or health club. In the context of financial sustainability Aunna Wilson suggests to create an opportunity how the organisation can gain an *independent source of revenue* or income, so that the project does not depend on grants and external funding. Pasand realises that by selling the curriculum to schools, which has advantages and disadvantages. Even though the organisation sells a product, she says that the formal institutionalization as a 'non-governmental organisation' helps to acquire projects and schools. However, she admits that it is sometimes challenging to convince a school to pay for the curriculum.

Aunna Wilson reports that it is a 'balance between how you make sure your model has scale to reach enough people but you are not getting too big that you lose the quality.' She and another interviewee thus suggest a **slow start** of a MHM-programme.

Three experts highlighted the importance to offer a **mixed interventions programme**. One expert said it is important to combine software and hardware components. This

aspect was already discussed in chapter 6.4.2. However, two experts referred to the institutionalization of the topic within different fields of work. Emily Wilson said that the issue crosses '[…] different sectors. It's a gender issue, it's a health issue, it's an education issue, it's a sanitation issue.' Eva Brandt agrees on this and suggests a linkage to projects which focus for example on birth control. She suggests approaching the topic in a synergetic way. Contrarily, Aunna Wilson warns that in the Nepalese context it is rather advisable to resign from linking the topic to any field of sexuality because this is negatively connoted and might be hampering. Again, the importance of the adaption to the cultural context can be illustrated by this point.

Eva Brandt further recommends an **independent project monitoring** that evaluates the success of the project.

The importance of **adequate infrastructure** and an **education component** was mentioned by five experts. These necessities were already discussed as factors of success for a MHM-project and for school attendance in section 6.4.3 and 6.4.2.

6.7. Representation of key factors of success to reduce menstruation related absenteeism

The previous sections illustrated all of those aspects which are either seen as favourable or hindering for girls to attend school and for the success of a MHM-programme in general. In the following section those factors of success which are of special importance to increase school attendance of adolescent girls and which can be tackled by a MHM-programme will be identified.

The analysis of the case studies brought about the preliminary result that supply of sanitary items, the provision of education or the combination of both, leads to an improvement in school attendance. Montgomery's study emphasised the particular importance of gaining knowledge on MHM, because the provision of sanitary items in combination with providing education led to a similar degree of improved attendance as education did alone. One could assume that in this case the provided education was the key factor which led to the improvement in school attendance.

Apparently, education is also considered as a factor of success by the experts. The detailed analysis in chapter 6.4.2 and 6.4.3 shows that education on MHM and an educational programme with MHM focus were one of the most frequently identified factors of success for both subcategories (factor of success for school attendance as well as of a menstrual hygiene programme). It is consequently also mentioned as a standard recommendation. Gaining awareness among the entire community for the special needs of menstruating girls was mentioned six times which can be achieved by an educational programme. A girl's opportunity to receive counselling and support, falls in line with the presence of a conscious society. Apart from being mentioned most frequently in absolute terms, education is also the aspect which has been mentioned most constantly. The following table summarises the general consensus of the experts on the importance of an educational programme and the awareness among the community. A ticked (✓) box indicates that the respective expert mentioned the respective intervention as a factor of success. The crossed (×) box means that the expert has not explicitly mentioned the intervention as a factor or success, but in a different context as favourable (for example as recommendation). The symbol ↕ would mean that a controversial argument to the factor of success was found in the respective interview. However, the symbol was not applied as no expert disagreed or denied the effect of the intervention.

One can recognize that every expert at some point of the interview mentioned an educational component and awareness among the community as favourable aspects.

Image 9: Overview about the importance of education and awareness

	Factor of success		
	School attendance		MHM-project
	Educational program	Awareness among community	Education/ Awareness raising
Aunna Wilson	✓	✓	✓
Elizabeth Ross	✓	✓	✓
Emily Wilson	✓	✓	×
Eva Brandt	×	✓	✓
Joanne Nakawaka	✓	✓	✓
Maria Hyttel	✓	✓	✓
Ola Perczynska	✓	×	✓

Source: own illustration, based on MAXQDA-analysis.

Additionally, the experts were asked to rank those interventions which they think would be most effective in reducing menstruation related absenteeism. Eva Brandt replied: 'From our point of view, education is in the first place' (freely translated).[94] Joanne Nakawaka stated: 'I think, teaching them all the biological things. It makes more sense when you know why you have cramps [..] So teaching them that and then helping them how to make their own absorbents. I think I would rank those the most.' Emily Wilson points out:

> *'I think it all comes down to girls' knowledge and also the knowledge of the schools and the boys and the teachers and an environment where girls are respected and where menstruation isn't a taboo and it isn't stigmatised. And I think this is probably the number one intervention. [It] is sort of is less countable than a product but it is education that can alter girls perspective of themselves and also of the schools community's perspective on menstruation.'*

In summary, the importance of an educational component has been stressed according to:

1. The result from Montgomery's case study
2. The absolute frequency of being mentioned as a factor of success for school attendance (six of seven experts)
3. The fact that *all* experts mentioned education as favourable, without converse arguments
4. The first place ranking of 'the most effective intervention' by two experts.

Applying these criteria lead to the result that the first and most important key factor of success is a **holistic culture-sensitive educational programme that raises knowledge and awareness not only among girls but also among their families, schools and communities.**

The previous analysis further showed that the availability of sanitary infrastructure and sanitary items plays a decisive role to keeping girls in school too. The positive impact of providing sanitary items to girls was validated by the analysis of the case studies (see page 32). The analysis of expert interviews verified this importance as most of the experts (five of seven) mentioned the availability of sanitary items as factor of success.

[94] Original passage form the interview: 'Also aus unserer Perspektive, weil das auch mit unserem Konstrukt und unserem Verfahren zu tun hat, ist die Ausbildung an erster Stelle.'

Joanne Nakawaka and Eva Brandt did not mention the availability of sanitary items as explicit as the other experts. This is most probably the case because both experts were very conscious of the importance of an educational programme. Both ranked education as the 'number 1' intervention (see page 56). Especially Joanne Nakawaka frequently pointed out the importance of the empowerment of the target group to enable them to produce sanitary items themselves. In that way she also confirms the importance of the availability of sanitary items.

The analysis further demonstrated the significance of sanitary infrastructure. All experts stated at some point of the interview the importance of adequate sanitary facilities. Joanne Nakawaka emphasises: 'Knowing that after a few hours I can go somewhere and wash and change, *that* would make me go to school.' The following table summarises broad agreement on the importance of sanitary items and sanitary facilities.

Image 10: Overview about the importance of sanitary facilities and items

	Factor of success		
	School attendance		MHM-project
	Availability of adequate facilities	Availability of sanitary items	Availability of facilities
Aunna Wilson	✓	✓	×
Elizabeth Ross	×	✓	✓
Emily Wilson	✓	✓	×
Eva Brandt	×	×	✓
Joanne Nakawaka	✓	×	✓
Maria Hyttel	✓	✓	×
Ola Perczynska	✓	✓	×

Source: own illustration, based on MAXQDA-analysis

In summary, the importance of sanitary facilities and items has been stressed according to:

1. The findings of the case studies.
2. The absolute frequency of being mentioned as factor of success for school attendance (five of seven experts)
3. The broad agreement among the experts to be favourable, especially in concerns of the availability of facilities

Considering these results it becomes clear that the availability of adequate sanitary infrastructure and sanitary items is crucial to keep girls in school. The manner in which a menstrual hygiene project promotes the access to both has to be adapted to the actual need and the socio-economic context. Thus, the **promotion of access to sanitary items and adequate sanitary infrastructure through the involvement of local stakeholders is necessary to ensure a long-term utilisation** is stated as another key factor of success.

From a quantitative point of view a *mixed interventional programme* could furthermore be seen as a key factor of success because it was stated by more than half of the experts (four times). The focus of this aspect lies on the combination of hardware and software components. For sure, providing sanitary items without explaining how to use them or without providing facilities where to change or wash them can hamper the success of the intervention. It that sense, the provision of sanitary items in combination with an educational component and the provision of infrastructure is clearly advisable, because one could assume that it enlarges the effect of the initial intervention. Contrarily, one could argue that providing education without providing the actual sanitary items or infrastructure might not create the desired effect on school attendance either. However, this is exactly what Montgomery investigated in his study. The project provided some girls with sanitary items and education and some only with education. After five months, the attendance rates of both intervention groups increased to a similar level. Stating a mixed interventions programme as a key factor of success is therefore disputable , based on this result. It seems that the eligibility of a mixed interventions programme strongly depends on the initial circumstances and the socio-economic context. It can by trend (based on expert opinions) be valued as a fostering aspect but cannot be stated as a key factor of success due to the Montgomery's converse finding.

Other factors of success were mentioned during the interviews less frequently or were not clearly associated with the increase of school attendance. They determined the general success of the project but rather did not play a significant role in answering the research question relating to school attendance.

If eliminating external factors such as the affordability of schooling[95] or the distance to school and focussing on menstruation related causes of absenteeism only, it can be said, that a girl's knowledge on menstruation and her awareness of how to deal with it, significantly determines whether she will attend school during menstruation or not. The access to this knowledge and awareness in turn mainly depends on the families', communities' and schools' knowledge and attitude towards menstruation. Further, the availability of necessities like appropriate sanitary infrastructure and sanitary items can be fostered by communities' awareness about the special needs of adolescent girls. A developmental programme that enables girls, their mothers, fathers, teachers and the entire society and helps to facilitate practical abilities and skills may have the potential to foster self-help mechanisms. As a result a society could be able to establish those structures of support (including infrastructure) which are necessary to eradicate menstruation related school absenteeism.

According to these considerations the following hypotheses have been deducted.

Hypotheses 1:

The lack of knowledge and access to appropriate knowledge might, in regions with a high influence of religion and traditional belief, be as hampering for school attendance as the lack of sanitary items and sanitary infrastructure.

Hypotheses 2:

Dropping out from school because of menstruation can be prevented by a holistic educational programme for girls, teachers and communities that simultaneously empowers them by enhancing capabilities and self-help mechanisms.

6.8. Results and recommendations for MHM-activities

The above deducted hypothesis implicit the answer to the research question of this study which was stated as: 'What are factors of success for Menstrual Hygiene Management

[95] This refers to direct cost for schooling like fees, uniforms etc. as well as opportunity costs for parents like the abdication of a ‚worker'.

projects in low and lower-middle income countries in order to improve school attendance among adolescent girls?'

First of all, it needs to be mentioned that the results and recommendations can only be applied in contexts where a need for menstrual hygiene projects has been assessed. The circumstance of every girl, region and society is context specific and therefore programmes always need to be adapted.

Given the need for a MHM-programme, the research found that awareness and knowledge among girls as well as the society is a key determinant. That fosters school attendance and that the gain of these assets is of substantial importance when planning and executing a MHM-programme. When looking at the different categories which were used to cluster the answers, the importance of a **culturally adopted multifarious educational component that targets girls as well as other stakeholders** was highlighted.

Another key factor of success is the **availability of girl friendly sanitary infrastructure and the access to sanitary items** which should be in line with the socio-economic context. In the researcher's perception, this can - at least to a certain degree - also be achieved by providing accurate knowledge. Educational and awareness raising programmes can create a mutual understanding among girls, families, schools and communities towards menstruation and the needs which come along with it. Those programmes can furthermore have the potential to enable the target group how to actually provide these necessities. Many researchers acknowledge **sustainability** as the basis of each developmental programme and that they should thus not foster (new) dependencies but instead empower the local people. Hence, it is advisable to promote solutions and technologies which are in line with the cultural, economic and environmental context. A thorough educational programme could for instance teach locals how to build girl friendly toilets or how to produce sanitary items. The production of sanitary items could arise to an income generating project or social business[96] which would ideally be self-

[96] 'A social business operates for the benefit of addressing social needs that enable societies to function more efficiently. Social business provides a necessary framework for tackling social issues by combining business know-how with the desire to improve quality of life.'

sustainable or even be a source of revenue. This income could for instance be used for infrastructural measures or could contribute to the economic welfare of a family/community/region and thus facilitate sustainable development. It needs to be mentioned, however, that those projects have to be treated with caution, because they potentially increase the possibility that children get involved in work and then again do not attend school.[97] In order to eradicate school absenteeism it is further advisable to make sure that a continuous access to the products is guaranteed. An **emergency stock of sanitary items in each school** is an option for unpredictable cases.

6.9. Limitations and discussion

Due to constraints in time, manpower and the lack of financial allowance a field study was not possible. Thus, it was not possible to conduct interviews with valuable stakeholders like students or teachers who directly participated in MHM-projects. This would have provided an additional perspective and would have been very enriching. Still, considering Joanne Nakawaka's point of view who grew up in Uganda was very constructive. In methodological terms the number of conducted interviews was sufficient to satisfy the interest of this research. However, an extension of interviews might have increased the range of answers and might have even allowed an extended quantitative consideration of the given answers.

As mentioned before the existing literature on the topic is still limited. There are not many studies that investigated the impact of MHM-interventions on school attendance in quantitative matters and those which did so, only evaluated the interventions' 'provision of education' and 'provision of sanitary items'. So far there are no quantitative studies that investigated the impact of promoting adequate sanitary facilities or painkillers etc. Thus, no statement about the impact of those measures can be given. Even though the provision of sanitary items and education had a possible impact on school attendance, menstruation related absenteeism could not totally be eliminated. Hence, there is a need for further research on possible solutions to close this gap in attendance.

Cf.: http://www.grameencreativelab.com/a-concept-to-eradicate-poverty/the-concept.html
[97] Interview, Elizabeth Ross, 05.11.2014.

Also, the studies that exist so far and that were evaluated focus on the short-term effects only. Until now there are no studies that analyse the effects on a girl's entire school career.

Additionally, it has to be said that the experts' opinions and knowledge can potentially be subjected to the findings of those studies. One expert even actively referred to one analysed case study and justified her statement with it. Thus, the strengthening of a factor through the same 'argument' cannot completely be ruled out, even though attempts were made to eliminate these cases.

7. Conclusion

Gender equality is one of the main aims of the Millennium Development Goals. The fact that at some educational levels this equality is still not achieved has led to enquiries about the causes of the failure of this MDG. Activists from the field together with researchers revealed that the lack of sanitary items, -infrastructure and knowledge keep girls from attending school during their menstruation, and, consequently these girls often drop out of the educational system altogether. This, in turn, leads to disparity in equal representation of both genders in school. Developmental organisations thus established programmes aiming to improve the management of menstrual hygiene in the respective regions. While for this particular thesis, the MHM-programmes were credited with the overall aim of increasing school attendance, literature shows that MHM has far broader potentials and can contribute to the fulfilment of other MDGs as well.

The research question addressed in this thesis is: **'What are factors of success for Menstrual Hygiene Management-projects in low and lower-middle income countries in order to improve school attendance among adolescent girls?'**

In order to answer this question, four scientific case studies are analysed and seven interviews with experts were conducted.

The case studies quantitatively evaluated the effect of 'provision of sanitary items', 'provision of education on menstruation' and the combination of both on school attendance. The results showed that in so far as menstrual related absenteeism or the need for improving menstrual health was preliminary reported, all of the conducted interventions had a positive effect on the girls' attendance in school. Hence, interventions can be acknowledged as successful.

The interviews aimed to identify factors of success that can contribute to the overall aim of reducing menstruation-related absenteeism. The experts interviewed here expressed that in addition to spreading awareness of, and increasing activity of hygiene behaviour, school performance, sustainability and institutionalization are favourable objectives of MHM-projects and should be considered as well. These objectives often overlap and have the potential to foster the increase of school attendance over the long run.

A common finding among experts interviewed during this research is that the access to menstruation-related education and spreading awareness among communities and families regarding menstruation-related needs of adolescents are most important to improve girls' school attendance. Furthermore, access to adequate sanitary facilities and sanitary items constitute important necessities for female adolescents in school. The opportunity to receive counselling and support as well as the access to pain killers was also mentioned, though less frequently. It was further suggested that collaboration with various stakeholders and including families, communities and schools, fosters widespread acceptance of the programmes as well as commitment and sustainability. All interventions must be adapted to the socio-ecological context in which the project takes place.

Therefore, a **holistic culture-sensitive educational programme that raises knowledge and awareness not only among girls but also among their families, schools and communities** has been found to be a key factor of success to keeping girls in school.

Another key factor is the **promotion of access to sanitary items and adequate sanitary infrastructure through involvement of local stakeholders to ensure a sustainable utilisation.**

This research has focussed on the effect of MHM-interventions on school attendance of adolescents. Building on this thesis, an analysis of the effects of MHM-interventions on girls' performance in school would enrich the understanding of these results. Such further analysis might include aspects such as a girl's ability to concentrate, her participation in class (for example the courage to stand up and speak) and, if possible, even the development of her grades. A girl's educational achievement is, in fact, much more significant than her actual attendance and is also more crucial for her future job opportunities and the overall utilisation of her potential. In this context, a need for long-term studies that investigate the effect of different types of interventions over a longer period of time is recommended for future large-scale research.

References

Ali T. S., Rizvi S.N. (2010): Menstrual knowledge and practices of female adolescents in urban Karachi, Pakistan. In: Journal of Adolescence 2010: Volume 33: 531–541. Available at: http://www.sciencedirect.com/science/article/pii/S014019710900075X [13.11.2014]

Atteslander P. (2006): Methoden der empirischen Sozialforschung, 11. Auflage, Berlin: Erich Schmidt Verlag

Bronfenbrenner U. (1979): The Ecology of Human Development: experiments by nature and design, Cambridge: Harvard University

Bronfenbrenner U. (1994): Ecological models of human development. In: International Encyclopedia of Education. Volume 3, 2nd edition, Oxford: Elsevier

Chaaban J., Cunningham W. (2011): Policy Research Working Paper: Measuring the Economic Gain of Investing in Girls. By: The World Bank Human Development Network Children and Youth Unit & Poverty Reduction and Economic Management Network Gender Unit. Available at: http://elibrary.worldbank.org/doi/pdf/10.1596/1813-9450-5753 [31.10.2014]

Croft T. (2012): Menstruation hygiene management for schoolgirls in low-income countries. Loughborough, UK. By: Water, Engineering and Development Centre. Available at: http://www.susana.org/_resources/documents/default/2-1569-fs007mhma4pages.pdf [04.11.2014]

Crofts T., Fischer J. (2012): Menstrual hygiene in Ugandan schools, an investigation of low cost sanitary pads. Journal of Water, Sanitation and Hygiene for Development, 2 (1), p. 50-58.

Dasgupta A., Sarkar M. (2008): Menstrual Hygiene: How Hygienic is the Adolescent Girl? In: Indian J Community Med. 2008; Volume 33(2): 77–80. Available at: http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2784630/ [12.11.2014]

FAWE (2009): Forum for African Women in educationalist. Kenya chapter: Final report on the impact of feminine hygiene on girls participation in education in Kenya.

Fehr A. (2013): WASH in Schools Empowers Girls' Education in Freetown, Sierra Leone: An Assessment of Menstrual Hygiene Management in Schools, New York. By: UNICEF. Available at: http://www.ungei.org/files/WASH_Sierra_Leone.pdf [23.10.2014]

Fitzgibbon M., Kong A., Tussing- Humphreys L. (2014): Understanding population health from multi-level and community based models. In: Rieckert K., Ockene J., Pbert L.: Handbook of Health Behaviour Change, 4th edition, New York: Springer Publishing Company.

George R. (2013): Celebrating Womanhood - How better menstrual hygiene management is the path to better health, dignity and business. London: Water Supply & Sanitation Collaborative Counsil.

Gläser J., Laudel G. (2010): Experteninterviews und qualitative Inhaltsanalyse, 4th edition, Wiesbaden: VS Verlag.

Hennink M., Hutter I., Bailey A. (2011): Qualitative Research Methods, Los Angeles: Sage.

House S., Mahon T., Cavill S. (2012): Menstrual hygiene matters. A resource for improving menstrual hygiene around the world, London: WaterAid.

Hussy W., Schreier M. and Echterhoff G. (2009): Forschungsmethoden in Psychologie und Sozialwissenschaften, Heidelberg: Springer Verlag.Haver, J. et al.: WASH in Schools Empowers Girls' Education in Masbate Province and Metro Manila, Philippines: An Assessment of Menstrual Hygiene Management in Schools. New York. By: UNICEF, available at: http://www.unicef.org/wash/schools/files/Philippines_MHM_Booklet_DM_15__Nov_1010_Single-_Philippines.pdf [14.11.2014]

Jahn D. (2013): Einführung in die vergleichende Politikwissenschaft, 2. Auflage, Wiesbaden VS Verlag.

Jewitt S., Ryley H. (2014): It's a girl thing: Menstruation, school attendance, spatial mobility and wider gender inequalities in Kenya. In: Geoforum 2014, Volume 56: 137–147. Available at: http://ac.els-cdn.com/S0016718514001638/1-s2.0-S0016718514001638-main.pdf?_tid=25620136-6b1d-11e4-b9a7-00000aab0f27&acdnat=1415873545_005f5a8bb75e94fd0617819569183691 [13.11.2014]

Kirk J., Sommer M. Menstruation and body awareness: linking girls' health with girls' education. Amsterdam, The Netherlands. By: Royal Tropical Institute (KIT), Special on Gender and Health. Available at: http://www.susana.org/en/resources/library/details/1200 [13.11.2014]

Kowal S., O'Connel D. (2003): Zur Transkription von Gesprächen, in: Uwe Flick et al. (Hrsg.): Qualitative Forschung – ein Handbuch, Reinbek bei Hamburg: Rowohlt-Taschenbuch- Verlag.

Kuckarzt U. (2010): Einführung in die computerunterstützte Analyse von qualitativer Daten. Wiesbaden: VS Verlag.

Lazarus S. (2007): Assumptions and values of community psychology. In: Duncan N. et al., Community Psychology: Analyses, context and action, Capetown: UTC Press.

Lee L.K. et al. (2006): Menstruation among adolescent girls in Malaysia: a cross-sectional school survey. In: Singapore Med Journal 2006: Volume: 47(10): 869 - 874, Available at: http://www.ncbi.nlm.nih.gov/pubmed/16990962 [14.11.2014]

Long J. (2012): WASH in Schools Empowers Girls' Education in Rural Cochabamba, Bolivia: An Assessment of Menstrual Hygiene Management in Schools. New York. By: UNICEF, available at: http://www.unicef.org/wash/schools/files/Bolivia_MHM_Booklet_DM_15_Nov_single_0940_Bolivia.pdf [13.11.2014]

Mahon T., Fernandes M. (2010): Menstrual hygiene in South Asia: a neglected issue for WASH (water, sanitation and hygiene) programmes. In: Gender and Development, 2010: Volume 18, Issue 1: 99-113, Available at: http://www.tandfonline.com/doi/abs/10.1080/13552071003600083#.VGSEOjSG8jw [13.11.2014]

Montgomery P., Ryus C. R., Dolan C.S., Dopsan S., Scott, L. M. (2012): Sanitary Pad Interventions for Girls' Education in Ghana: A Pilot Study. In: PLoS ONE, October 2012, Volume 7, Issue 10.

Oster E., Thornton R. (2010): Menstruation, Sanitary Products and School Attendance: Evidence from a Randomized Evaluation. In: American Economic Journal: Applied Economics January 2011, 91-100.

Shafi M. (2011): Gender, WASH and education case study: Enhancing girls' participation in schools in Pakistan. Oxford. By: Oxfam GB. Available at: http://www.ungei.org/files/cs-wash-girls-participation-pakistan-130911-en.pdf [14.11.2014]

Sommer M. (2010): Where the education system and women's bodies collide: The social and health impact of girls' experiences of menstruation and schooling in Tanzania. In: Journal of Adolescence, 2010: Volume 33, Issue 4: 521–529. Available at: http://www.sciencedirect.com/science/article/pii/S0140197109000347# [13.11.2014]

Thakre S.B. el al. (2011): Menstrual Hygiene: Knowledge and Practice among Adolescent School Girls of Saoner, Nagpur District. In: Journal of Clinical and Diagnostic Research 2011, Volume 5(5): 1027-1033, Available at: http://www.jcdr.in/articles/PDF/1522/30%20-%202941.pdf [13.11.2014]

Tjon A. Ten, Varina (2007): Menstrual Hygiene – A Neglected Condition for the Achievement of Several Millenium Development Goals. By: Europe External Policy Advisors (EEPA), Zoetermeer: October 2007.

United Nations (2012): The Millennium Development Goals Report 2012. New York: June 2012, United Nations.

University of Minnesota (2011): Postsecondary Education for Students with Intellectual and Developmental Disabilities: A Critical Review of the State of Knowledge and a Taxonomy to Guide Future Research, published by: Research and Training Center on Community Living, Institute on Community Integration, Volume 21, Nr. 1, Minneapolis: February 2011.

Wilson E., Reeve J., Pitt A. (2012): Education. Period. Developing an acceptable and replicable menstrual hygiene intervention. In: Development in Practice, 2014, Vol. 24, No. 1, 63–80.

Further documentation of this case study available at: INSPIRES: INvestigating A reusable Sanitary Pad Intervention In a Rural Educational Setting: Published by: Published By the School Of Health And Related Research (ScHARR), University of Sheffield. Available at: http://eprints.whiterose.ac.uk/43906/1/Irise_report_-_Dec_2012_%5BSAJ%5D_v2_(1).pdf

Online References

BMZ (2010-2014): Arbeitsfelder und Instrumente: Bildung für Frauen und Mädchen Grundschulbildung für alle Kinder gewährleisten. Available at: http://www.bmz.de/de/was_wir_machen/themen/menschenrechte/frauenrechte/arbeitsfelder_und_instrumente/bildung/index.html [27.10.2014]

BMZ (2010-2014): Gleichstellung der Geschlechter fördern und die Rolle der Frauen stärken. Available at: http://www.bmz.de/de/was_wir_machen/ziele/ziele/millenniumsziele/MDGs_2015/mdg3/index.html [27.10.2014]

Grameen Creative Lab: The Social Business concept. Available at: http://www.grameencreativelab.com/a-concept-to-eradicate-poverty/the-concept.html [20.01.2015]

Menstrualcup (2014): What is a menstrual cup? Available at: http://menstrualcup.co/ [05.11.2014]

Stegher (2012): Menstruationstasse / Menstruationsbecher. Available at: http://www.menstruationstassen.de/ [27.10.2014]

SuSanA (Sustainable Sanitation Alliance) (2014): Why sustainable sanitation? Available at: http://www.susana.org/en/ [13.11.2014]

United Nations (2015): Background. Available at: http://www.un.org/millenniumgoals/bkgd.shtml. [27.10.2014]

WASH United (2014): 28 May: Menstrual Hygiene Day. Available at: menstrualhygieneday.org/faq-4/menstrual-hygiene-day / [20.11.2014]

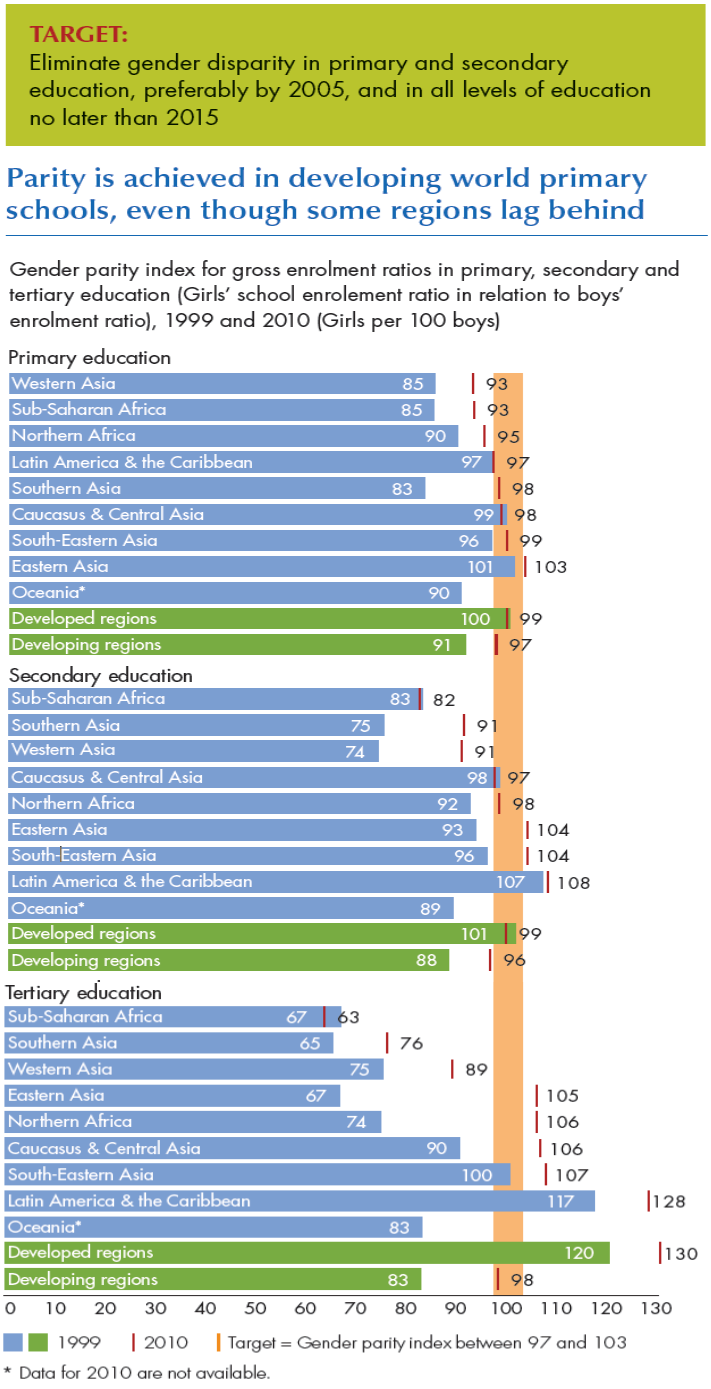
WoMena (2014): About Womena. Available at: http://www.womena.dk/WoMena/WoMena.html [09.02.2015]

World Bank (2015): Country and Lending groups. Available at: http://data.worldbank.org/about/country-and-lending-groups [27.10.2014]

World Bank (2014): Millenium Development goals: Goal 3 Promote Gender Equality and Empower Women by 2015. Available at: http://www.worldbank.org/mdgs/gender.html [14.11.2014]

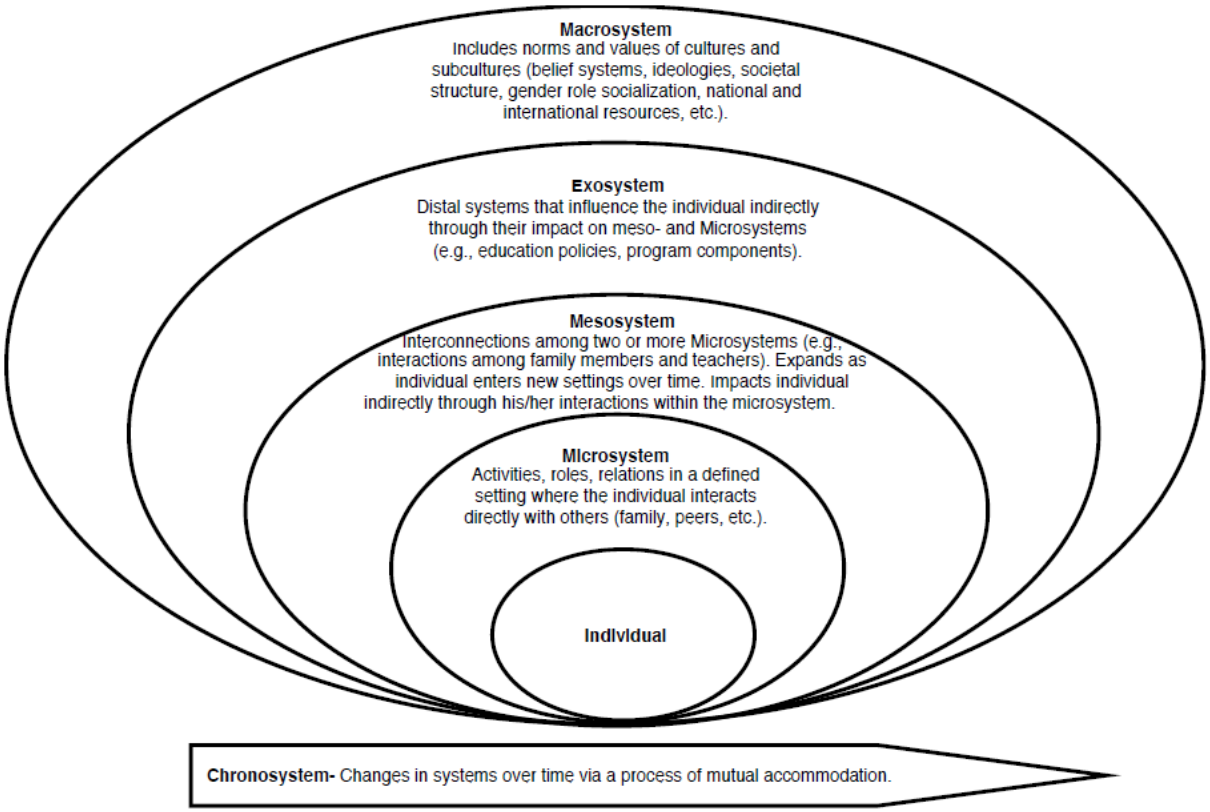
Annex

Annex 1: Gender parity index



Source: United Nations 2012: 20.

Annex 2: Ecological model by Bronfenbrenner



Source: University of Minnesota 2011: 6.

Annex 3: List of conducted and potential interviewees

Female	Male	Activist	Researcher		
Aunna	Wilson	Pasand	Co-Executive Director & Co-Founder	India	conducted, 18.112014
Elizabeth	Ross	Kasiisi project	Founder and Director	Uganda	conducted, 05.11.2014
Emily	Wilson	IRISE International	Chair at Irise International, Honorary Research Fellow at the University of Sheffield, Researcher at Kampala International University	Kenya, Uganda	conducted, 28.10.2014
Eva	Brandt	Ruby Cup	Sales and Project Manager	Kenya, Tansania, Uganda	conducted, 06.11.2014
Joanne	Nakakawa Hampson	IRISE International	Freelancer	Uganda	conducted, 13.11.2014
Maria	Hyttel	WoMena	Co-founder	Kenya, Niger	conducted, 17.112014
Ola	Perczynska	Her Turn	Program Manager	Nepal	conducted, 11.11.2014
Catherine	Naserian	Forum for African Women Educationalists	National Coordinator FAWE Kenya	Kenya	agreed, 29.10.2014, but could not be held due to bad internet connection

Annex 4: Interview guideline researcher

Interview guideline

Background information:

Date & place of interview:
m/f:
Name & organisation:
Position & function:
Length of occupation:

Introductory questions:

1. Am I right, that you are [Position of researcher] and that your [aim of organisation]. Alternatively: Could you please describe your position and the aim of your organisation/ institute?

2. Since when have you personally been researching on MHM and how did you gain knowledge?

Main questions:

3. What are key factors of success for MHM-projects?

4. In your opinion what needs to be done to eradicate school absenteeism due to menstruation?

5. How would you explain the fact that girls still miss school even though they are aware of MH and are equipped with necessary infrastructure/ items?

6. What would you recommend organisations that plan projects to improve menstrual health and/or increase school attendance?
   - Line of action? Time frame? Interventions? Group size? Costs? (Should beneficiaries contribute to costs in order to improve commitment to the project?) Should men be included? In which parts?

7. If you had to rank, which approach or which interventions would you grade most effectively?
   - Sanitary items? WASH infrastructure? Education? Pain relief?

8. What are hampering factors for the success of a MHM-project?
    - If an activist asked you what he/she should refrain from doing within the scope of a MHM-project, what would you say?
    - How can the 'Do No Harm'-approach be applied?

9. Another study in Kenya found that female genital mutilation (FGM/ female cutting) affects girls and leads to absenteeism even above the average. How do you explain this and how can this aspect be included in MHM-projects?

10. Another study conducted in Nepal found that school absenteeism is not, or only to a very little degree, related to MHM. Do you have any idea how this could be explained?

11. The same project provided girls with menstrual cups as sanitary item. How would you appraise this approach? How suitable do you find the menstrual cup?

Final questions

12. Is there anything else that you want me to know or that you find important to mention?

Annex 5: Interview guideline activists

Interview guideline

Background information:

Date & place of interview:
m/f:
Name & organisation:
Position & function:
Length of occupation:

Introductory questions:

1. Am I right, that you are [Position of interviewee] and that your [aim of organisation].
   Alternatively: Could you please describe your position and the aim of your organisation/ institute?

2. Since when have you personally been working on MHM and how did you gain your knowledge?

Main questions:

3. How would you define a successful MHM-project?
   - Lengths? Sustainability? Inclusion? Target group? (current students or already dropped out students, inclusion of community/family, midwives, health worker, men)

4. What are key factors of success for MHM-projects?

5. In your opinion, what particularly needs to be done to eradicate school absenteeism due to menstruation?

6. How would you explain the fact that girls still miss school even though they are aware of MH and are equipped with necessary infrastructure/ items?

7. What would you recommend organisations that plan projects to improve menstrual health and/or increase school attendance?

- Line of action? Time frame? Interventions? Group size? Costs? (Should beneficiaries contribute to costs in order to improve commitment to the project?) Should men be included? In which parts?

8. If you had to rank, which approach or which interventions would you grade most effectively?
   - Sanitary items? WASH infrastructure? Education? Community approach? Pain relief? Advocacy?

9. A study in Ghana has shown that education leads to a similar reduction of absenteeism as the provision of sanitary pads. How would you appraise this?

10. How can you design a MHM-project sustainable?

11. What have you specifically learned from the projects you have executed previously?
    - Which advantages and disadvantages do you see concerning the approach?
    - Which advantages and disadvantages do you see concerning the conducted measures?
    - Were there aspects that you did not expect or that surprised you? Any failures?

12. What are hampering factors for the success of a MHM-project?
    - If an activist asked you what he/she should refrain from doing within the scope of a MHM-project, what would you say? (aims at the success of the project itself)
      (Examples of failure? Interventions that didn't reach the target group? Items that are not sustainable/ not suitable? Funding? The gender/age of involved staff?)

    - How can the 'Do No Harm approach' be applied? (aims at unintended negative consequences)

13. A study conducted in Nepal found that school absenteeism is not, or only to a very little degree, related to MHM. Do you have any assumption how this could be explained?

14. The same project provided girls with menstrual cups as sanitary item. How would you appraise this approach? How suitable do you find the menstrual cup?

15. A study in Kenya found that female genital mutilation (FGM/ female cutting) affects girls and leads to absenteeism even above the average. How do you explain this and how can this aspect be included in MHM-projects?

Final questions:

16. Is there anything else that you want me to know or that you find important to mention?

Thank you

Annex 6: Notations

(...)	Short break up to three seconds
(3)	Break from three seconds upwards by indicating the number of seconds
[..]	Deletion of word to better readability
[example]	Insertion of word to better readability
Ahum/ Ehm	Filler
[Laughing]	Para-linguistic attribute
[4 sec. incomprehensible]	incomprehensible pronouncement by indicating the number of words or seconds
[irrelevant from 0:00:00-0:08:00]	Irrelevant for analysis

Simultaneous talking:

R: group in Kenya that are making pads, uhm]

I: [Afripads?

Annex 7: Code system MAXQDA**,** 05.12.2014

1. **Background information:** Describes the interviewees' involvement and experiences in menstrual hygiene projects.

2. **Definition of a successful MHM-project:** Gives the interviewees' opinion towards aspects which make menstrual hygiene projects favourable.

    - Institutionalized
    - Sustainability
    - Gain in knowledge
    - Behaviour change/ improved sanitary items,- infrastructure
    - Improved performance
    - Improved attendance

3. **Key factors of success (MHM-project):** Describes the interviewee's opinion towards factors of success of a menstrual hygiene project according to personal view on 'success'.
    - Availability of facilities
    - Collaboration
        - Multiple entities
            - Local partners
            - Men/ community leader
            - Relatives
            - Schools/ teachers
    - Counselling/ Support
        - Medical Backup
        - Peer education programme
    - Education/ Awareness raising
        - Atmosphere
        - Considering environmental aspects
        - Empowerment of girls
        - Inclusion
            - Boys and men
            - Female relatives
            - Older women
            - Teachers
        - Interdisziplinarity
        - Through local partner

- Ensure sustainability of project
    - Empowerment
    - Long- Term Commitment
    - Usage of local products/ materials/ considering environmental impact
- Long- term commitment

4. **Key factors of success to (school attendance):** Describes the interviewee's opinion towards factors of success to reduce school absenteeism due to menstruation.
    - Context specific
    - Mixed interventions programme
    - Educational programme
        - Before menarche
        - Teach in a group
    - Awareness among community/ family
    - Availability of adequate facilities
    - Availability of pain killers
    - Availability of sanitary items
    - Counselling/ support

5. **Hampering factors (MHM-project):** Describes the interviewee's opinion towards factors that hamper the success of a menstrual hygiene project
    - Corruption
    - Disposal issue
    - Exclusion of decision makers
    - Interruption of programme/ Lack of money
    - Poor education
    - Provision of hardware without software
    - Taboos/ restrictions
    - Western perspective/ wrong communication
    - Wrong usage/ non- using of products

6. **Hampering factors (school attendance):** Describes the interviewee's opinion towards hampering factors for girls attending school
    - Combination of issues
    - Distance too far/ hard to reach
    - Fear of smell
    - Fear of staining/ Lack of sanitary items/ underwear
    - Harassment
        - Risk of sexual abuse
        - Teasing of boys

- Illness/ cramps
- Irregular supply of sanitary items
- Lack of adequate sanitary facilities
- Lack of knowledge
- Lack of support
    - Taboo/ restriction
    - Other responsibilities
    - Traditional gender roles
- Low quality of education/school
- Pregnancy

7. **Ranking of intervention:** Expresses the interviewee's opinion towards those interventions which are most effective.
    - Disposable pads
    - Not possible
    - Education
    - Combination of interventions
8. **Recommendations:** Describes recommendations to other organisations who want to execute MHM-programme**.**
    - Adoption to socio- economic context
    - Decision making by girls
    - Education
        - Practical advise
        - Include marginal groups
        - Materials understandable for illiterate people
        - Teachers
        - Mentoring programme
    - Ensure long-term use of intervention
        - Long-term commitment
        - Empowerment
        - Repeat trainings
        - Person in charge
    - Independent monitoring
    - Involvement
        - Schools
        - Males
        - Local people
    - Provision of infrastructure
        - Provide sanitary items
        - Girl friendly facilities
        - Use local/ reusable products

        - Provision of various products
    - Start slowly

9. **Lessons Learned:** Describes which lessons the interviewee has learned from previous conducted measures
    - Adoption of programme to local context
    - Cooperation with schools
    - Create trust
    - Differentiate between sex- and health education
    - Interdisciplinary of projects/ topics
    - Involvement
        - Males
        - Mothers
        - Older girls
    - Large scale project at too early stage
    - NGO Status
    - Self-made pads not feasible
    - Separate girls and boys during education
    - Shift atmosphere

10. Menstrual Cup suitability
    - Concern about virginity
    - Concern about washing
    - Cost effective/ long-term solution
    - Creates dependency
    - Easy to handle/ wash
    - Environmentally sustainable
    - Not suitable for young girls
    - Reduces school absence

11. **Sustainability:** Describes the interviewees opinion how a menstrual hygiene project can be designed sustainable
    - Ensure long-term usage of products
    - Ensure a source of revenue/income
    - Involve local people/authorities/communities
    - Repeat educational programmes
    - Use sustainable materials

12. **Aspects in interaction with FGM:** Describes possible linkages between female genital mutilation (FGM) and menstrual hygiene

13. **Other: Summarizes interviewees' experiences which are not relevant for answering the research question.**

Annex 8: Summary of case studies

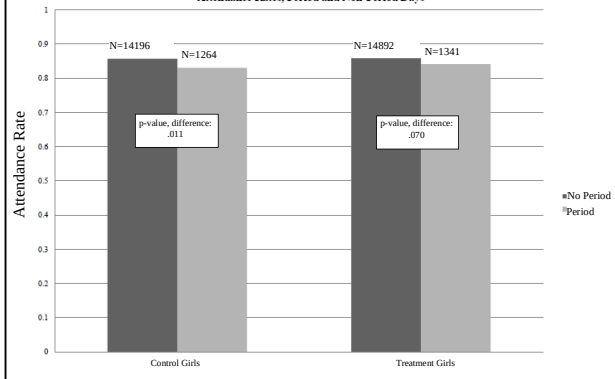
	Research timeframe	Research region	Sampling Size	Need Assessment	Research design		
FAWE	Phase 1: July/Aug. 2007 Phase 2: Oct./ Nov. 2007 Phase 3: Dec. 2007/ Jan.2008	Kenya, 12 schools from Nairobi slum area (3 schools) and Garissa (economically disadvantaged + FGM widely spread)(9 schools)	Phase 1: 1002 girls (877 post menarche, between 12 and 156 girls per school) Phase 2: 356 girls (post-menarche) Phase 3: 664 girls	Sanitary items used: Garissa=rags, weathered camel skin, towels covered in plastic blankets, toilet paper, sponge. Nairobi= rags, toilet paper, old clothes, soaked old newspapers and cotton wool. Teachers recognised behaviour change during menstruation (limited movement, frequent breaks from class, isolation, decrease in physical activities + general absenteeism)	**Phase 1: Baseline study** (Questionnaire + group discussion with students, parents and teachers on their view about M. (12 schools, 1002 girls), observations on sanitary facilities) **Phase 2: Intervention** (10 schools (5 test school, 5 control schools) Test schools: Garissa= 3; Nairobi=2 (356 girls); Control schools: (G: n=4; N: n=1))299 girls) **Phase 3: Follow Up survey** (664 girls, 2 months after Phase 2)	Cooperation between FAWE & Unicef & Procter and Gamble.	Self report. Comparison between the 'missed school days' after intervention between test and control group.
Montgomery	2008/2009. Duration of interventions: 5 months.	Ghana. 4 Project sites - 3 periurban villages in the central region (ethnically, economically, culturally 'typical'), 1 rural village ('remote') site in Ashanti region.	120 girls (age:12 - 18, all post-menarche girls). Mean age: 15,7 years.	95.2% of rural and 20.2% of peri urban school girls agreed, that they have missed school due to menstruation. Most rural girls had no experience with sanitary pads.	**Phase 1: Feasibility &development.** (Individual Interviews, focus group discussion, community meetings with 200 girls, parents, teachers. Research team from Oxford in participation with governmental/non-governmental organisations) **Phase 2: Piloting & Evaluation.**	PP: CARE. Schools selected by PP based on fixed criteria (sufficient school population, gender disparity, community acceptance, support) + geographic + religious affiliation. Project sites randomly assigned to different intervention groups.	Attendance recorded by school (9/08-09/09 (=2.5 terms/ 162 schooldays) Researches compared official attendance data with actual student attendance at every site visit (planned + unplanned) - no significant difference, hence strong reliability of data on school attendance. Girls were asked to keep diary on menstrual cycles + pad use.

	General description	Education	Sanitary Items	Outcome
FAWE	2 levels of intervention (multi-faceted approach). 1) Sanitary item + education 2) Control group	Teachers were trained as trainers for gender responsive pedagogy + puberty education. They then trained girls of group 1 on about physical + emotional aspects of puberty, how to manage menstruation hygienically	Group 1: Provision of sanitary towels, sufficient for two months Group 2: nothing	After intervention level of absenteeism fell drastically (measured by days). 'Absence' (per 2 months): test gr.=1.2 days; control gr.=4.9 days. 'Did not miss any school': test gr.= 77.9%, control gr.=25.1%, High disparity between Garissa and Nairobi. **Frequency Table Showing The Days Of School Missed Over The Past Two Months Due To Problems Related To Menstruation For The Girls In The Test Group And Control Group** 0 Days / 1-3 Days / 4-6 Days / 7 Or More Days / Total Test Group — Count: 247 / 27 / 23 / 20 / 317 Test Group — Percent (%): 77.9 / 8.5 / 7.3 / 6.3 / 100.0 Control Group — Count: 87 / 78 / 79 / 103 / 347 Control Group — Percent (%): 25.1 / 22.5 / 22.8 / 29.7 / 100.0 Total — Count: 334 / 105 / 102 / 123 / 664 Total — Percent (%): 50.3 / 15.8 / 15.4 / 18.5 / 100.0
Montgomery	3 levels of intervention 1) sanitary item+education (2) 2) education alone (1) 3) control group (1)	Group 1: daily calendar, pencil, sharpener. Education: development of secondary sex characteristics, biological process of menstruation, pregnancy, hygiene and menses management, use& disposal of sanitay pads, local language used, held during school hours to groups of 15 - 20 girls; Group 2: same as group 1, except use + disposal of sanitary pads Group 3: nothing	Group 1: provision of 1 pair of underwear. 12 pads per months. Group 2: nothing Group 3: nothing	1) attendance rose by ~ 6 days per term (65 days) or 9% 2) initially no increase but at end of trial (after 5 months) improved attendance to a similar level as intervention group 1. **Table 1.** Percentage attendance across sites over time. Treatment: / Location: / Pre-intervention attendance mean percent (SD) / Midpoint of intervention attendance mean percent (SD) / Post-intervention attendance mean percent (SD) Pads-with-Education(n = 39) / Periurban / 81.95 (29.06) / 90.34 (10.52) / 90.54 (17.37) Pads-with-Education(n = 21) / Rural / 77.09 (22.04) / 92.43 (5.38) / 89.74 (9.35) Education only(n = 25) / Periurban / 78.94 (24.81) / 80.26 (19.01) / 91.26 (7.82) Control (n = 35) / Periurban / 88.90 (12.40) / 83.46 (12.50) / 84.48 (12.4)

	Sanitary infrastructure	Typ of school	Religions practised/ Cultural background	Limitations of study
FAWE	Sanitation not always available.	Not specifically mentioned in report, but assumption of day schools, because' girls tend to go home during menstruation'.	Female genital mutilation	
Montgomery	rural site: no facilities at school, but community pit latrine at the village; periurban site: sometimes available but in bad condition, no water, no privacy. Some girls had chance to use facilities at their home due to close location.	Assumption of day schools, as researches calculated 'time distance to school'	Majority of Christians, 2 Muslims	size of sample, small number of sites, short length of time.

	Research timeframe	Research region	Sampling Size	Need Assessment	Research design		
Wilson	2011, 3 visits within one months	Kenya, 10 schools (Nyanza province, rural area)	302 girls (all post-menarche), from 4 primary and 6 secondary schools (11-26 yrs.). Mean age: 15.45 yrs.	Baseline: mean number of days missed due to menstruation: 1,66. 35,5% miss school one or twice, 17,25% miss schools several times. 71% of the girls agreed on the statement that girls cannot afford sanitary pads. Proportion of girls using alternative methods for protection similar to the proportion missing school due to menstruation	**Phase 1: baseline study** (demographics, schooling, menstruation, current practises) **Phase 2: Intervention** **Phase 3: Follow up survey** (4 weeks after Phase 2)	PP: Omega (local NGO), School selected by PP and randomised assigned to intervention/control school (with some restrictions e.g. proximity of schools)	Self reported number of days missed of school
Oster, Thornton	Nov.2006 - Jan.2008	Nepal, 4 schools in Chitwan district (2 peri urban + rural schools)	Phase 1: 198 girls from 7^{th} and 8^{th} grade. Mean age: 14,2 yrs. Phase 2: 25 girls	98% of girls used menstrual cloths (old sari). attendance (prior intervention): non-menstruation-days: 85.7 menstruation-days: 83.0% --> girls miss 0.19% of school due to menstruation (--> 0.35 days/180 day school year) - according to researcher no need according for improving availability of sanitary items; Main reason for missing schools: 43.8% cramps, 10%: washing rags or restrictions on mobility	**Phase 1: Baseline survey** (demographics, schooling, menstruation) **Phase 2: Intervention** (25 girls each school) **Phase 3: Follow up survey**	schools randomly selected, on the criteria of willingness to cooperate. Girls randomly (lottery) assigned to treatment group	Attendance recorded by school. Researched rechecked by random visits, 87% reliability. Girls were asked to keep diary on their cycle (only first 6 days of a months). Comparison of the difference in attendance rates between days with & without menstruation. Comparison of attendance rates for treatment group and control group.

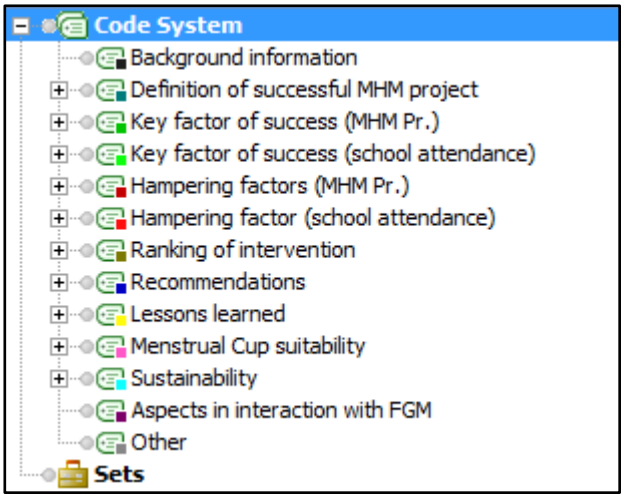
<table>
<tr><th></th><th>General description</th><th>Education</th><th>Sanitary Items</th><th>Outcome</th></tr>
<tr><td>Wilson</td><td>2 levels of intervention.
1) Provision of sanitary item
2) Control group</td><td>Group 1: 3 hrs. workshop on how to produce Mwezi pad, discussions on instructions, activities to ensure girls gain of knowledge. Handout about how to design Mwezi Pad, instructions for washing and drying, information on risk/irritation management.
Group 2: nothing</td><td>Group 1: Mwezi kit (cotton, plastic, towel, press studs, needle, thread)
Group 2: nothing</td><td>In general: Group 1: number of days missed decreased or stayed constant. Group 2: stayed constant or increased. In average: reduction of school days: 1.48 days. (reduction of general absenteeism by 68.8%, from 9.9 to 3.1 school days). Menstruation related: Group 1+2: number of days missed due to menstruation decreased, slightly more in the intervention group.

Table 5.1: The effect of menstruation on school absenteeism
<table><tr><th rowspan="2">How often does menstruation make you miss school?</th><th></th><th colspan="2">Group*</th></tr><tr><th></th><th>Control</th><th>Intervention</th></tr><tr><td>Baseline</td><td>Never</td><td>58 (41.7)</td><td>66 (52.8)</td></tr><tr><td></td><td>Once or twice</td><td>52 (37.4)</td><td>42 (33.6)</td></tr><tr><td></td><td>Several times</td><td>29 (20.9)</td><td>17 (13.6)</td></tr><tr><td>Follow-up</td><td>Never</td><td>41 (47.1)</td><td>45 (61.6)</td></tr><tr><td></td><td>Once or twice</td><td>34 (39.1)</td><td>19 (26.0)</td></tr><tr><td></td><td>Several times</td><td>12 (13.8)</td><td>9 (12.3)</td></tr></table>* Value is the total number of girls who responded with that answer (% of group)</td></tr>
<tr><td>Oster, Thornton</td><td>2 levels of intervention.
1) Provision of sanitary item.
2) Control group</td><td>Group 1: Explanation on how to use menstrual cup
Group 2: nothing</td><td>Group 1: Provision Menstrual Cup (brand: Moon Cup)
Group 2: nothing</td><td>60% of the girls used the cup.
Improved sanitary technology has no effect on improved attendance, no evidence of higher attendance overall for the treatment group, treatment girls are not significantly more likely to attend school on all days.
Figure 1:
Attendance Rates, Period and Non-Period Days
 

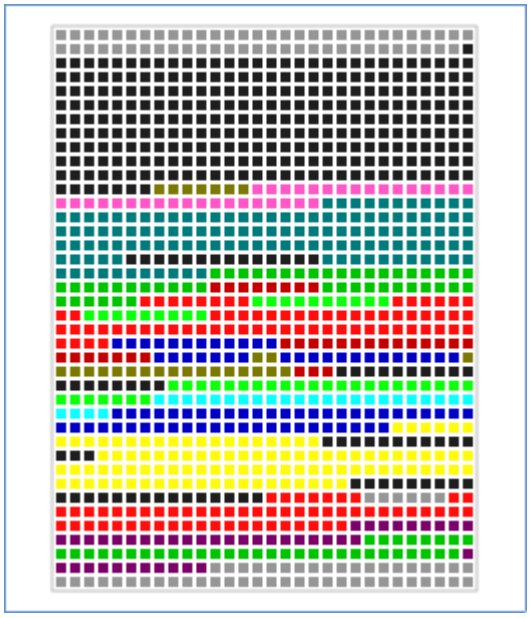
Notes: This figure shows attendance rates (from official attendance data) for girls in our sample on period and non-period days. The first set of columns uses control girls, who have access only to poor sanitary technology. The second set of columns uses treatment girls, who have access to the menstrual cup.</td></tr>
</table>

	Sanitary infrastructure	Typ of school	Religions practised/ Cultural background	Limitations of study
Wilson	Couple of simple pit latrines and small amount of water	Day school.	Not specifically mentioned in report, but Christianity widely practised	small number of participants + clusters. Thus no significant results. Language. One intervention group dropped out. ICC very high --> girls within the schools influence each others behaviour, attitudes etc. Only 56.6% of the girls used the pad all the time and 27.6% some of the time.
Oster, Thornton	Sanitation and Water available at most schools	Day school	47% Hindu	only 60 % used the cup; mean age: 14.2; "only" 87% have started menstruation; small size of sample.

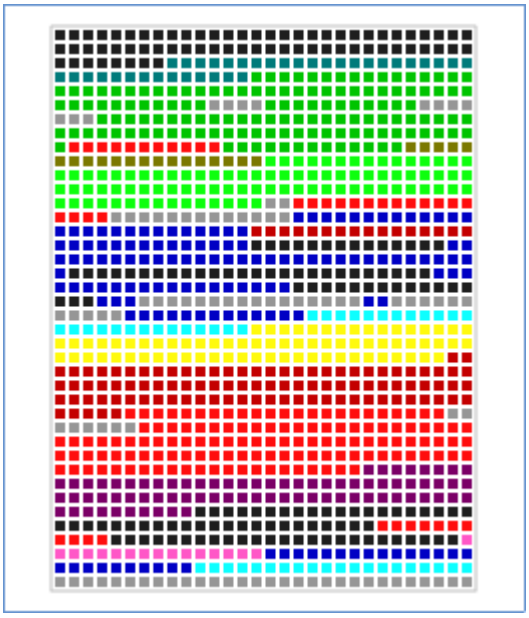
Annex 9: Code system coloured



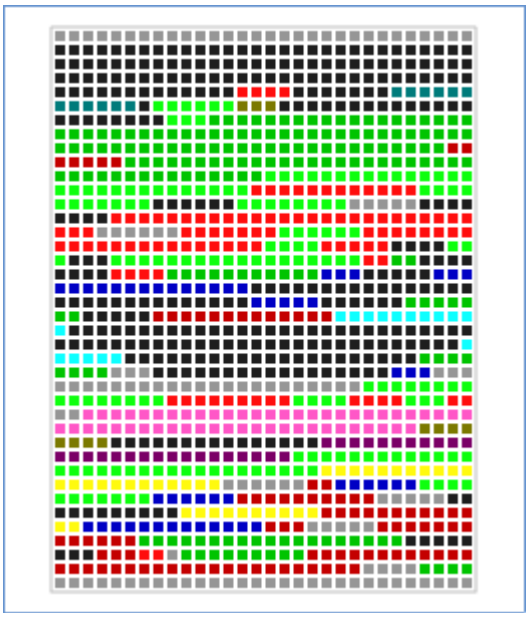
Annex 10: Portraits of document



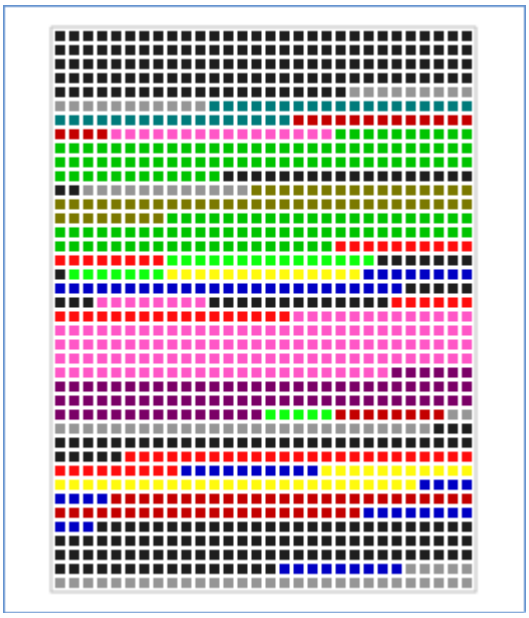
Aunna Wilson



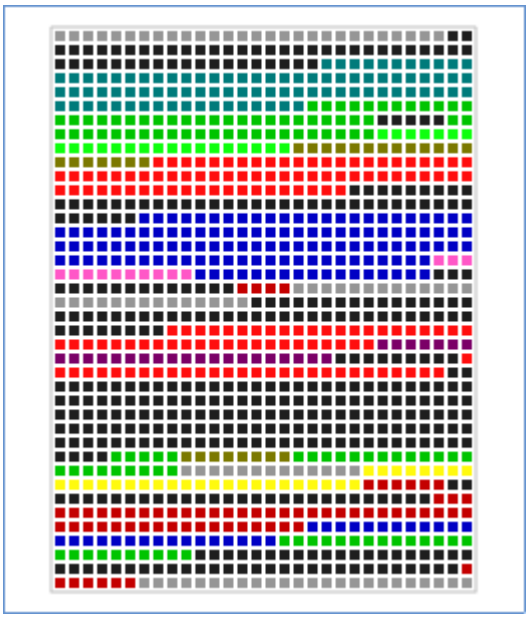
Joanne Nakakawa



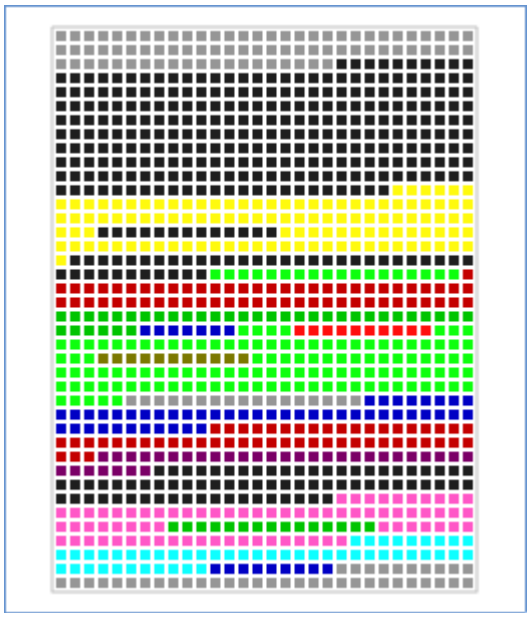
Elizabeth Ross



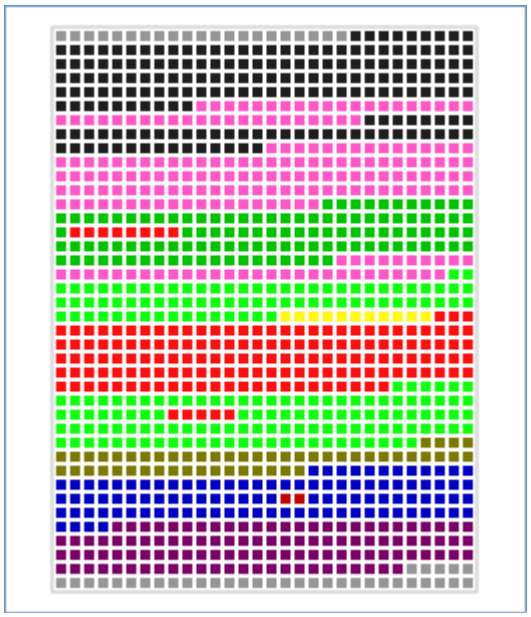
Eva Brandt



Ola Perczynska

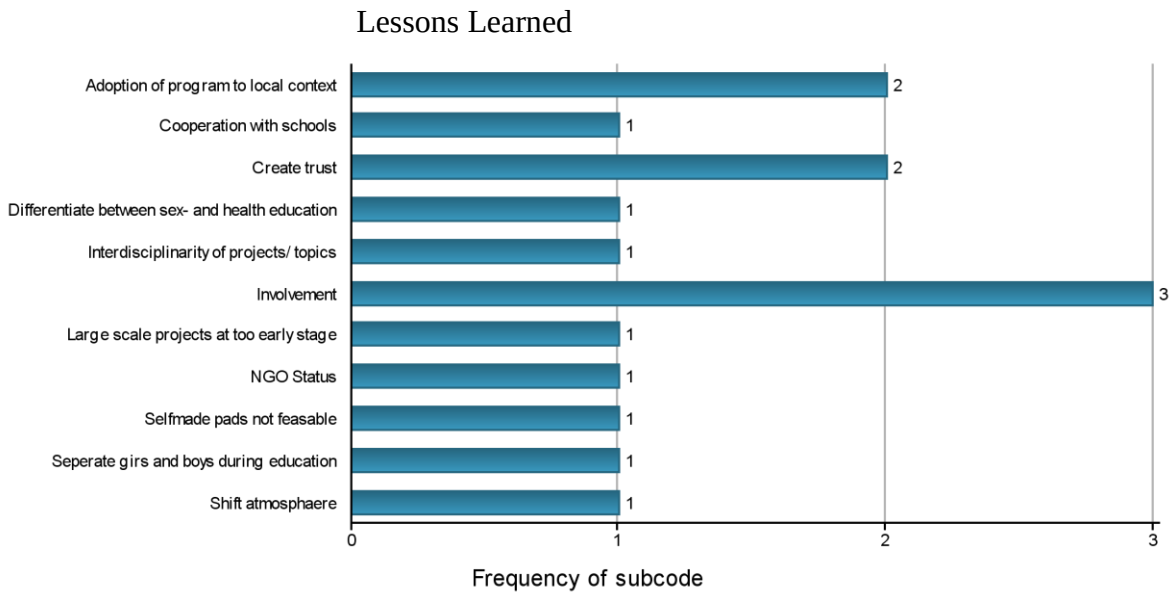


Emily Wilson



Maria Hyttel

Annex 11: Frequency table ‘Lessons learned’



Source: Own illustration, based on MAXQDA-analysis

Eidesstattliche Erklärung

Hiermit erkläre ich, dass ich meine Masterarbeit zur Erlangung des Grades Master of Arts (M.A.) mit dem Thema:

‘Dropping out of school because of Menstruation? - An analysis of factors of success for Menstrual Hygiene Management-projects in low and lower-middle income countries’

selbstständig und ohne unerlaubte Hilfe verfasst, ganz oder in Teilen noch nicht als Prüfungsleistung vorgelegt und keine anderen als die angegebenen Hilfsmittel benutzt habe. Die Stellen der Arbeit, die anderen Quellen (einschließlich des World Wide Web und anderen elektronischen Text- und Datensammlungen) im Wortlaut oder dem Sinn nach entnommen wurden, sind durch Angabe der Herkunft kenntlich gemacht. Mir ist bewusst, dass ich im nachgewiesenen Betrugsfall die eventuell entstehenden Kosten eines Rechtsstreits zu übernehmen sowie mit weiteren Sanktionen zu rechnen habe.

Ort, Datum Unterschrift des Kandidaten