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Evaluation of Handheld Solar Lights among Displaced Populations in Haiti

August 2013 – April 2014

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A PROGRAM EVALUATION OF HANDHELD SOLAR LIGHTS AMONG DISPLACED POPULATIONS IN HAITI

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ABBREVIATIONS & ACRONYMS

CCCM	**Camp Coordination and Camp Management Cluster**
CDC	**US Centers for Disease Control and Prevention**
CI	**Confidence Interval**
DTM	**Displacement Tracking Matrix**
DV	**Domestic Violence**
FGD	**Focus Group Discussions**
GBV	**Gender Based Violence**
GEE	**Generalized Estimating Equation**
GIZ	**Gesellschaft für Internationale Zusammenarbeit**
IASC	**Interagency Standing Committee**
IDP	**Internally Displaced Persons**
IMS	**Information Management System**
IOM	**International Organization for Migration**
IPV	**Intimate Partner Violence**
IRC	**International Rescue Committee**
MINUSTAH	**United Nations Stabilization Mission in Haiti**
MV	**Monitoring Visits**
NAP	**National Action Plan**
NFI	**Non Food Items**
PNH	**Police Nationale d'Haiti/National Police of Haiti**
UN	**United Nations**
UNHCR	**United Nations High Commissioner for Refugees**
WPE	**Women's Protection and Empowerment**

EXECUTIVE SUMMARY

INTRODUCTION

During humanitarian crises, the gender inequities that underpin Gender Based Violence (GBV) are exacerbated, placing women and girls at increased risk of violence. Internally displaced persons (IDP) and refugees are uniquely vulnerable to GBV; inadequate facilities and limited resources expose women and girls to the risk of sexual and economic exploitation, trafficking, and other forms of GBV.

Violence against women and girls is a significant human rights, global health, and security issue that has long-lasting impacts. While guidelines for GBV prevention in humanitarian settings exist, information on how to implement and measure the impact of these interventions in local contexts is limited. Though it is widely cited that improved lighting in refugee and IDP camps improves the safety of women and girls, little research has been conducted on the effectiveness of these interventions in reducing risk to violence.

As of March 2013, an estimated 347,284 individuals displaced during the 2010 earthquake remain in 450 IDP sites across Haiti. The International Rescue Committee (IRC) assessments of GBV in Haiti in 2012 identified numerous issues for women and girls living in displaced camps; issues included increased vulnerability to violence and susceptibility to exploitation, and obstacles to accessing quality medical and case management services for survivors of sexual violence and other forms of GBV. As part of the US National Action Plan on Women, Peace and Security (NAP), IRC with support from the US Centers for Disease Control and Prevention (CDC), distributed handheld solar lights to all households in two camps, Camp Toto and Camp Rue de Nimes/Sinai during August 2013.

The goal of the evaluation was to evaluate the use and benefits of handheld solar lights and to explore sense of safety among females aged 14 years and older living in two IDP camps in Port-au-Prince, Haiti. The objectives of the evaluation included the following:

> ***Objective 1:*** To describe the physical environment and assess risks in the camps pre and post distribution of the handheld solar lights;
> ***Objective 2:*** To document the utility of handheld solar lights among females aged 14 years and older;
> ***Objective 3:*** To measure the durability of the handheld solar light, not only in terms of breakage, but also in terms of loss to theft or loss through voluntary gifting; and
> ***Objective 4:*** To measure the sense of safety among females aged 14 years and older pre and post handheld solar light distribution.

METHODS

Study design: A mixed methods study design was employed to gather data over a nine month period from August 2013 to April 2014 using the following methods:

- Direct observation to document the physical environmental characteristics of the camps and potential risks during the night time (baseline and endline);
- Focus group discussions (FGDs) to explore unsafe locations for women and girls, night time activities, existing strategies to prevent GBV, barriers/facilitators to using handheld solar lights, and benefits and potential risks from use of lights (baseline and endline); and
- Household surveys to identify sources of lighting, female participation in night time activities, use of lights by household members, durability of lights, and sense of safety at night (baseline, monitoring visit 1 (MV1), monitoring visit 2 (MV2), monitoring visit 3 (MV3), and endline survey).

Data analysis: For FGDs, content analysis was used to discern findings, using a comparative approach that examined differences between two age groups (14-19, 20 and older) and differences between the camps. For household surveys, descriptive analyses were conducted to assess the distribution of indicators. Chi-square and independent sample t-tests were used to compare categorical and continuous variables, respectively, by camp and age group. A Life-Table survival analysis approach was used to estimate handheld solar light retention over time. Perceptions of safety, sources of lighting, presence of security forces, and night time activities were then analyzed to determine whether there was a significant change in indicators between baseline and endline surveys.

A total of 80 and 82 respondents participated in the baseline and endline FGDs, respectively. Final samples sizes and percent complete for the household surveys are described below:

- Baseline: N=754 (84.3%)
- MV1: N=650 (81.2%)
- MV2: N=579 (76.8%)
- MV3: N=572 (79.3%)
- Endline: N=634 (88.1%)

Eighty-seven percent of the endline household survey participants were the same female from the same household as the baseline survey (n=553). The remaining participants were different females from the same household and the same family; these females were interviewed due to unavailability of the originally selected female. From initiation of the baseline survey to completion of the endline survey, there was a 29% loss to follow-up.

KEY FINDINGS

Objective 1: Physical environment

- The two camps were perceived as unsafe places among women who participated in FGDs. This finding was supported by survey results showing that more than half of participants avoided certain areas of the camp due to safety concerns.
- Direct observation via safety audits captured major differences between the physical environments of the two self-constructed camps. Camp Sinai had less access to electricity,

street lighting in public places, and security forces compared to Camp Toto. Camp Sinai's shelters were mostly tents, while shelters in Camp Toto were mostly made of wood.
- The odds of reporting going outside the house at night to buy water/food/gas/other (both camps) and for personal reasons (Camp Sinai) significantly increased from baseline to endline.

Objective 2: Utility of handheld solar lights

- The handheld solar lights, according to the FGDs and the survey data, were the most common source of indoor and outdoor lighting; a high proportion of participants reported daily use and would recommend the lights to friends and family.
- Indoor and outdoor use of candles and gas lamps had a statistically significant decrease from baseline to endline.
- FGD participants verbalized several important benefits of the handheld solar lights: 1) no risk of house fire that an open flame would present; 2) the ability to see where they were going, as well as who is around them in the dark; and 3) the ability to do things after dark such as sell goods, which contributed an economic benefit.
- FGD participants verbalized two potential dangers related to using the lights: 1) the ability of outsiders to see into tents; and 2) having a light meant that one could be a target for theft.

Objective 3: Durability of the handheld solar light

- Data from monitoring visits, as well as the endline survey, indicate that the handheld solar lights were durable. More than three-quarters of endline survey participants reported no breakage of the light after 7 months.
- Most women and girls kept the handheld solar light; households had an 88% probability of still owning the light after 7 months.
- Theft was the most common reason for not having the light.

Objective 4: Sense of safety

- The majority of women and girls reported fear of violence, and one-fifth of women who went outside the home at night reported fear of sexual violence.
- FGD participants reported feeling unsafe from crime as a result of fighting, harassment from men, and lack of infrastructure and protection inside the camps.
- Household survey data demonstrated that women in Camp Sinai had increased odds of feeling unprotected at endline compared to baseline; FGD participants supported this finding with females reporting deterioration of camp conditions over time.
- The most commonly reported factors that would make women feel more protected from crime included greater presence of security forces, such as the Police Nationale d'Haiti (PNH), the United Nations Stabilization Mission in Haiti (MINUSTAH), and neighbourhood brigades.

CONCLUSIONS

Fears of physical and sexual violence are widespread and risks to women and girls continue to persist at the endline. The unfavourable physical environment of the camps, which include its crowded living conditions, inconsistent and illegal access to electricity, and lack of doors to latrines, is an important factor contributing to women and girls feeling unsafe. The evaluation indicated that women and girls used the solar lights regularly; however, the lights do not address their most commonly held fears (e.g., thugs, physical violence, gunshots). The solar lights addressed a clear need for women and girls: access to a consistent portable lighting source. This, as well as durability and retention rates, could be a reason for investing in future distributions of this kind. Future studies should be expanded to other settings and should further evaluate the role of lighting in the prevention of GBV and how best to measure sense of safety among women and girls in emergency settings.

Recommendations

- The humanitarian community in Haiti should work toward improving the physical camp environment, such as improved lighting and shelters, in the IDP camps in order to affect the security and safety of women and girls.
- Safety audits should be conducted regularly to identify and describe the deteriorating physical conditions of the camps over time so that improvements can be managed more effectively and equitably.
- Based on recommendations made by women and girls, security presence and community patrols should be strengthened inside Sinai and Toto Camps.
- Handheld solar lights should be considered as one aspect of an overall package of services offered to women and girls.
- Given the utility and durability of these handheld solar lights, donors and humanitarian organizations should consider supporting the distribution of handheld solar lights for individual use to improve the overall quality of daily life for women and girls.
- Future studies should consider validating the findings of this research on the utility and durability of lights, including other types of solar and non-solar, non-battery powered lights, in other settings and across emergency management phases.

1. INTRODUCTION

1.1 Gender-Based Violence: Risk Factors During Displacement

The Interagency Standing Committee (IASC), a forum of United Nations (UN) and non-UN partners that work together to strengthen coordination of humanitarian assistance, defines gender-based violence (GBV) as “an umbrella term for any harmful act that is perpetrated against a person’s will, and that is based on socially ascribed (gender) differences between males and females. The term ‘gender-based violence’ highlights the gender dimension of these types of acts; in other words, the relationship between females’ subordinate status in society and their vulnerability to violence” [1]. During humanitarian crises, women and girls are at increased risk of violence due to the exacerbation of

gender inequities and the destabilization or destruction of systems and structures that usually protect them [1, 2].

Internally displaced persons (IDPs) and refugees are uniquely vulnerable to GBV. For example, they may be subjected to GBV by persons in authority or their regular partners or approached for sexual acts in exchange for assistance and protection. Systematic reviews estimate that one in five female refugees experiences sexual violence [3] and that intimate partner violence (IPV) often occurs at higher rates than wartime rape or violence against women outside the home [4]. Some of the major contributing factors for GBV during displacement include loss of security, lack of economic livelihood, alcohol, drug use/abuse, psychological trauma, disrupted roles within the family and community [5], and lack of knowledge of individual rights [6]. The International Rescue Committee (IRC) GBV emergency rapid assessments suggest that women and girls face risks related to lack of appropriate camp design and layout, dearth of camp security and patrols, and inaccessibility to information and resources. Delayed or non-existent programming to prevent and respond to GBV can further compound violence in humanitarian settings [7-9].

The IRC uses a GBV Information Management System (IMS) to gather information on reported cases of GBV among displaced populations for internal use. Characteristics of GBV incidents in countries where IRC has programming and where the GBV IMS has been implemented are described in Table 1.1. In 2013, more than 9,000 incidents of GBV were reported in IRC's GBV IMS.

Table 1.1 Characteristics of GBV incidents reported in IRC's GBV IMS across all countries using GBV IMS (N=9,167)—January-December, 2013.

Person	• Almost all of survivors were female (99%), and the majority were women age 18 or over (70%). • About a quarter of survivors had previously reported an incident of GBV (28%). • Almost half of reported incidents were perpetrated by an intimate partner (46%), one-quarter by a stranger (23%), and 7% by a family friend or neighbor.
Place	• Half of incidents took place at the survivor's residence (48%), and one-quarter of incidents took place in the perpetrator's residence (24%).
Time	• Almost half of reported incidents occurred in the evening (45%). • Of the incidents that occurred in the evening, 51% were incidents of rape and 24% were incidents of physical assault. • Of the incidents that occurred in the evening, 37% of survivors had a previous experience of GBV.

1.2 Prevention Of Violence Against Women And Girls

Violence against women and girls is a significant human rights, global health, and security issue [4]. A 2013 systematic review examined the evidence supporting initiatives to reduce risk and incidence of sexual violence in humanitarian crises. Findings suggest that evidence from disaster settings is limited, that no studies measured the impact of these initiatives on the incidence of sexual violence, and that the interventions demonstrated a mix of positive and negative associations with risk reduction [10].

Despite GBV being increasingly recognized in the humanitarian community, there are persistent barriers to increasing access to life-saving and risk reduction services. Protection, defined as encompassing "all activities aimed at ensuring full respect for the rights of the individual", is a significant factor in GBV prevention [11]. Systems and strategies are needed to monitor and respond when women and girls' rights are breached, and direct services are needed for those who have experienced violence. Protection activities include the development of safe and secure environments for women and girls, the distribution of non-food items (NFI), improvement in household location and security, firewood and safety patrols, allocation of registration cards, and implementation of long-term social norm and behavioral change interventions.

Women and girls are vulnerable when using communal water and sanitation facilities, and during food distributions and fuel collection, particularly at night or in dark places [12]. One approach used to mitigate or prevent GBV is the distribution of handheld solar lights to women and girls. The existence of lighting specifically allows women and girls to gauge their environment to determine when they might be at risk and communities to better identify perpetrators of violence. Hypothetically, better lighting might deter perpetrators by making their acts of violence more evident to the community. Handheld solar lights may also allow women and girls to identify and avoid potentially dangerous areas through enhanced visibility.

While guidelines for GBV prevention in humanitarian settings exist, information on how to implement and measure the impact of these interventions in local contexts is limited [4, 6]. One key action in the guidelines is to provide adequate lighting in communal areas and lighting for individual use as a protection mechanism [1]. As part of the United Nations High Commissioner for Refugees' (UNHCR) Light Years Ahead Campaign, solar lanterns and street lights are being implemented in displaced communities in order to improve education and safety. UNHCR conducted program monitoring and annual surveys in three pilot countries and reported positive feedback on the durability and use of the lights, as well as safety and lifestyle changes [13]. In Uganda, the German federal aid agency, Gesellschaft für Internationale Zusammenarbeit (GIZ), conducted a field test of solar light programs and found that lighting improved children's ability to study and do homework in the evenings at home; further exploration, however, was recommended to understand how women use the lights in specific contexts [14]. Though it is widely cited that improved lighting in refugee and IDP camps improves the safety of women and girls, little research has been conducted on the effectiveness of these interventions related to risk reduction to violence against women and girls [11, 15-17].

1.3 The 2010 earthquake in Haiti and IRC In Haiti Post Earthquake

On January 12, 2010, an earthquake centered in Léogâne, Haiti caused massive destruction and displacement of more than one and a half million individuals. In March 2013, the Camp Coordination and Camp Management Cluster (CCCM), led by the International Organization for Migration (IOM), estimated 347,284 individuals (or about 87,750 households) remained in 450 IDP sites. During the immediate post-earthquake period, the IRC Women's Protection and Empowerment (WPE) program responded to the urgent needs of women and girls through risk reduction via non-food items (NFI) distribution, service provision, coordination, and advocacy activities. Now, the IRC WPE program has

shifted its focus to support the development of community-based referral mechanisms and service provision to vulnerable Haitians and to Haitian organizations, focusing in Port-au-Prince, the Grand Anse province, and areas of IDP return.

IRC assessments of the GBV situation in Haiti, conducted in December 2012, identified the following issues for women and girls living in camps for IDPs:

- Increased vulnerability to violence due to separation from family and communities, and seeking shelter in overcrowded, makeshift settlements;
- Increased susceptibility to exploitation and violence due to their inability to access food distributions, emergency shelters, and other assistance;
- Increased risks related to poor lighting, congested sleeping spaces, and a lack of appropriate bathing facilities, hygiene materials, and shelter;
- Significant loss of potential income due to the inability to undertake commerce activities when it was dark as most feared or found it unfeasible to operate during the night.
- Major obstacles for survivors of sexual violence and other forms of GBV trying to access medical and case management services as many structures had been destroyed, service providers were rendered non-operational, and the remaining facilities were overwhelmed [18].

Focus group discussions among women identified adolescent girls as the most at-risk population for GBV, though all of the women interviewed reported feeling unsafe [19].

The IRC WPE currently implements GBV prevention programs in urban neighborhoods of IDP return and rural marginalized areas. In addition, IRC promotes the leadership of women and girls in their communities through empowerment activities, safe spaces for adolescent girls, and mobilization of stakeholders to improve the participation of women and girls in the recovery, reconstruction and development process [4]. Post-earthquake, the Haiti WPE program package included solar light distribution, whistles, and referral cards which informed survivors about referral services.

In August 2013, IRC distributed handheld solar lights to all households in Camp Toto and Camp Sinai to address the increased risks related to poor lighting found in IRC's 2012 assessment described above. An evaluation was planned to assess the use and utility of the lights.

1.4 Evaluation Rationale

Humanitarian organizations, including the IRC, regularly distribute NFIs (e.g., dignity kits, clothing) during emergencies. Access and usefulness are monitored through post-distribution surveys, yet little is known regarding perceptions of safety before and after a distribution.

The US National Action Plan on Women, Peace and Security (NAP) released in November 2011 outlines how humanitarian emergencies can be more effectively avoided, and peace better addressed and sustained. The goal of this first-ever US NAP is to empower women to act as equal partners in preventing conflict and building peace in countries threatened and affected by war, violence, and insecurity. This aspiration has been articulated through various objectives and activities developed to

harmonize US government interventions to be more impactful [20]. The situation in post-earthquake Haiti presented unique challenges and opportunities to assess the NAP, by integrating and evaluating gender and protection issues as part of responses to crises and enhancing measures to prevent and respond to GBV in those environments. The distribution of handheld solar lights is one mechanism partners sought to address these issues, while simultaneously addressing the US government's interest in assessing new technologies.

The information obtained from this evaluation is needed to: 1) inform the IRC WPE program, specifically risk reduction activities in two IDP camps in Port-au-Prince; 2) improve program effectiveness and inform decisions about how to improve the safety and well-being of women and girls among this population; 3) inform a discussion about the relevance and appropriateness of distributing handheld solar lights to households post-emergencies for donors and practitioners; and 4) inform the IRC's decision about how (or if) to sustain or improve solar light distributions as a measure to mitigate risk of GBV in humanitarian settings.

2. OBJECTIVES

The goal of this evaluation was to document the use and benefits of handheld solar lights and to explore sense of safety among females aged 14 years and older in two IDP camps in Port-au-Prince, Haiti (Camps Toto and Rue de Nimes/Sinai, hereafter referred to as Camp Sinai). The objectives of the evaluation include the following:

- To describe the physical environment and assess risks in Camp Toto and Camp Sinai IDP camps pre and post distribution of the handheld solar lights;
- To document the utility of handheld solar lights among females aged 14 years and older in Camp Toto and Camp Sinai;
- To measure the durability of the handheld solar light; not only in terms of breakage, but also in terms of loss to theft or loss through voluntary gifting; and
- To measure the sense of safety among females aged 14 years and older in Camp Toto and Camp Sinai pre and post handheld solar light distribution.

3. METHODS

3.1 Setting and Intervention

Camp Toto and Sinai are two established IDP camps in the metropolitan area of Port-au-Prince. Most people living in these camps were displaced as a result of the 2010 earthquake and are considered to be some of the most vulnerable populations living in Haiti.

The combined population of the two camps was 5,783 people, with an estimated 2,057 females aged 14 and older in July 2013, immediately prior to the Intervention. The population of Camp Sinai was approximately one-third the size of Camp Toto.

The sites were selected for the intervention and evaluation based on the following criteria:

- Existence of an IRC program (not necessarily GBV related programs);
- Having formal camp management, as part of the CCCM cluster, with an updated census that could be used for sampling design purposes; and
- Camp stability, defined as the camp remaining open until 2014.

The two selected camps differ with respect to street lighting: Camp Sinai has none and Camp Toto has solar street lights. The distribution of handheld solar lights to all households occurred in September, 2013. The d.light S300 Solar Lantern was used for the evaluation (Figure 3.1.1). A solar panel attaches to the light via a cable and charges the light when in the sunlight; the panel also has the ability to charge a mobile phone. The light was available locally.

Figure 3.1.1 d.light S300 Solar Lantern

3.2 Evaluation Design

The *CDC's Framework for Program Evaluation in Public Health* was used as the model for the study design, data collection protocol, and data analysis and interpretation [21]. A mixed method study design was employed to gather data at multiple time periods. The data were collected prospectively over a nine month period from August 2013 to April 2014 through the following methods:

- Direct observation;
- Focus group discussions (FGDs) (baseline and endline); and
- Household surveys:
  - Baseline survey (prior to handheld light distribution);
  - Monitoring visit 1, one month after the baseline survey and distribution of lights;
  - Monitoring visit 2, three months after the baseline survey and distribution of lights;
  - Monitoring visit 3, five months after the baseline survey and distribution of lights;
  - Endline survey, seven months after the baseline survey and distribution of lights.

3.3 Participant Selection Criteria

The inclusion criteria for participation in the study were:

1. Females aged 14 and older;
2. Living in households in IDP camps Toto and Sinai; and
3. Who speak Haitian Creole.

Females aged 14 and older encompass a standard demographic of young adolescent women of reproductive age generally considered in studies of reproductive health. Exclusion criteria included any

females who did not have the capacity to respond to the questions due to mental or physical disabilities.

3.4 Sampling Frame

The sampling frame for the evaluation was based on the March 2013 IOM Camp Registration Database, which included all individuals living in the camps registered by IOM. The sample size calculations were based on the numbers from IOM sampling frame (Table 3.4.1). The database included the:

- Name of the camp;
- Total population by sex; and
- The female population in five year age groups.

Table 3.4.1 Population Demographics from the March 2013 IOM Database

	Total	Camp Sinai	Camp Toto
Females aged 15 to 19	436	119	317
Females aged 15 & older	2057	533	1524
Females aged 20 and older	1621	414	1207
Total camp population (males & females)	5783	1486	4297
Total camp households (males & females)	1429	387	1042

3.5 Sample Size Calculations

Household surveys:

Sample size calculations were made to address the main study goals of documenting the use and benefits of handheld solar lights and to explore sense of safety among females aged 14 years and older in two IDP camps in Port-au-Prince. The sample size was calculated separately for three evaluation indicators:

1. Use of light;
2. Light durability; and
3. Sense of safety.

Assumptions:

1. An infinite population, rather than a finite population, was assumed for the sample size calculations;
2. Only one woman per household sampled;
3. The estimated number of households for Camp Sinai was 387 (Table 3.4.1) which restricted the sample size to 387 women. Taking into consideration the assumed 20% non-response rate, a sample size of 310 women was reached for Camp Sinai. This estimate was rounded down to 300 as a conservative estimate of the maximum sample size.

Use of light and light durability: For the "use of light" and the "durability of the light" indicators, a Kaplan-Meier survival function approach was used to estimate the change over time using no adjustment for the finite population. Simulations were used to estimate the change of each indicator over time and the precision of the survival probabilities at each time point based on different sample sizes. A 95% confidence limit around the survival probability was used as an estimate of precision. The simulated change for each indicator used for sample size estimation and the final model is presented in Table 3.5.1. It was assumed that the use of the solar light would increase at each of the four measurement time periods. Similarly for the durability of the light indicator, the failure of the solar lights at each measured time point was estimated. The unit of analysis of the "use of light" indicator is a person within a household and the "durability of light" unit of analysis is the solar light. The sample size for Camp Sinai was assumed to be 300 yielding a precision <=5.6% for the survival probabilities. For Toto, the precision target was a 95% half-width confidence interval less than or equal to 5%.

Table 3.5.1 Use of Light and Durability Sample Size Estimates for Survival Probabilities and the Associated 95% Half-width Confidence Intervals

	n	Time 0 %(+/- 95%CI)	Time 1 %(+/- 95%CI)	Time 2 %(+/- 95%CI)	Time 3 %(+/- 95%CI)	Time 4 %(+/- 95%CI)
Use of Light						
Total	700	0	25 (3.2)	40 (3.6)	50 (3.7)	55 (3.7)
Sinai	300	0	25 (4.9)	40 (5.5)	50 (5.6)	55 (5.6)
Toto	400	0	25 (4.2)	40 (4.8)	50 (4.9)	55 (4.9)
Durability						
Total	700	95 (1.6)	80 (3.0)	70 (3.4)	65 (3.5)	60 (3.6)
Sinai	300	95 (2.6)	80 (4.5)	70 (5.2)	65 (5.4)	60 (5.5)
Toto	400	95 (2.2)	80 (3.9)	70 (4.5)	65 (4.7)	60 (4.8)

Sense of Safety: A binary outcome of a respondent's perceived sense of safety was used as the outcome variable for the third sample size calculations. It was assumed that the solar flash light would improve a respondent's sense of safety from the baseline survey to endline survey and that the camp without lighting (Sinai) would have a greater change versus the camp with lighting. It was also assumed that the younger age group (ages 14 to 19 years) would have a larger change in improved sense of safety than the older age group (ages 20 years and older).

The power calculations are presented in Table 3.5.2 based on potential scenarios of change from baseline to endline using a fixed total sample size of 700 women (Sinai=300, Toto=400) and sampling from an infinite population. The 700 sample size was considered fixed based on the Kaplan-Meier simulations. The first power calculation used an exact conditional McNemar's test to estimate a power of 82% based on a sample size of 700 persons for absolute change of 5% sense of safety from a baseline percentage of 50%, an alpha=0.05, and an assumed correlation of 0.60. The second power calculation of 95% was calculated using a Fisher's exact test based on the difference between change from baseline to endline between Sinai (absolute change of 20% from baseline) vs Toto (absolute change of 10 % from baseline) using a fixed sample size of 300 and 400, respectively, and an alpha of 0.05. The final power calculation of 88% was calculated using a Fisher's exact test based on an the

difference between change from baseline to end line between young women 14 to 19 years of age (absolute change of 20% from baseline) versus women 20 years and older (absolute change of 10% from baseline) using a fixed sample size of 300 and 400 respectively, and an alpha of 0.05.

The sample size of 700 was increased to 875 to account for an assumed non-response rate of 20%. All sample size and power calculations were run in SAS version 9.3.

Table 3.5.2 "Sense of Safety" Power Calculations Based on a Fixed Sample Size Pre-Post

Difference Measured	Sample size	Comparison group	Alpha	Power
Change of 5% from a Baseline of 50%	700	Pre-Post	0.05	82%
Camp difference of 10%	Sinai: 300, Toto: 400	Pre-Post Camp Difference	0.05	95%
Age difference 10%	Ages 14-19: 174, Ages>=20: 525	Pre-Post Age difference	0.05	88%

3.6 Selection of Participants

Focus group discussions: Based on recommendations for conducting effective FGDs, we aimed to include eight to 12 participants in each FGD. A purposive sampling technique was used to recruit participants from the population of both camps representing different sections of each camp, with group parameters defined by age and sex. Camp zone leaders were used to facilitate recruitment of women to focus groups along with the camp registration lists. FGDs were conducted with four groups of adolescent females (aged 14-19) and four groups of adult females (aged 25 to 45) at baseline and at endline, for a total of 16 groups.

Household surveys: The same households (defined as a group of individuals eating from the same pot for the past two weeks) were followed over time. The female randomly selected at baseline was followed over time whenever possible. In cases where the selected female was not available at a monitoring visit, another adult from the household, who was knowledgeable about light use among all members of the household, was interviewed. In cases where the selected female was not available at endline (after a minimum of three return attempts on separate days), another female aged from the household was randomly selected for participation.

The stratified study design called for different proportions of eligible women to be selected within each camp, with a size of 375 out of approximately 553 women in Camp Sinai and 500 out of approximately 1207 women in the Camp Toto. The sampling was done for camps in two stages:

- Selection of households within a camp; and
- Selection of eligible women within a household.

For the Camp Sinai, an exhaustive survey of households was administered because only one woman per household would be selected and the sample size was close to the total number of households in the camp. For Camp Toto, the camp was divided into segments and one out of every two households

within a segment was selected using systematic sampling with a random start. Camp Toto was divided into approximately equal segments of households using satellite images from Google Maps and a camp image from the Displacement Tracking Matrix (DTM) site.

For the second stage of sampling, the enumerator listed all eligible females aged 14 and older within each selected responding household. If only one woman was eligible in a household, then that woman was selected. In cases where there was more than one eligible female aged 14 and older in the household, enumerators randomly selected one female using the Kish Method [22]. If the selected female selected declined to participate, she was not replaced.

Teams recorded individuals at the household level who refused to participate as "non-response". If the randomly selected participant was absent, then at least two more attempts on separate days were made to contact them. Those who could not be traced after the third visit were recorded "absent" and not replaced.

3.7 Procedures For Data Collection

Direct observation: Members of the evaluation team walked through the two IDP camps to observe the physical environmental characteristics of the camp during the night time; findings were recorded on a safety audit data collection instrument (Appendix A). The observations occurred at baseline and endline.

Focus group discussions: FGDs were conducted at baseline and endline. One facilitator and two note takers conducted the FGDs within the camps; FGDs lasted approximately 60-90 minutes. FGDs were carried out in Haitian Creole using a semi-structured interview guide to collect information on the following: unsafe locations for females (by time, weather conditions, and place), night time activities conducted by females, existing strategies to prevent GBV, barriers/facilitators to using handheld solar lights, and benefits from use of lights (Appendix B). The FGD tool was pilot tested with a small sample of females and modified as needed prior to formal data collection. FGD participants also engaged in a participatory mapping exercise in which they drew a map of the camp, highlighting central features and areas perceived to be dangerous, and the type of danger that occurred in those areas.

Household surveys: All interviews were conducted in Haitian Creole at baseline (month 0), on a bi-monthly basis after distribution (months 1, 3 and 5), and at endline (month 6/7). Households selected at baseline were visited during monitoring visits and at endline. Houses were given household numbers during the baseline survey so that they could be more easily identified for follow-up surveys. Using a structured questionnaire, the household surveys assessed the following:

- Baseline: sources of lighting, female participation in night time activities, and sense of safety at night (Appendix C);
- Monitoring visits (MV): use of lights among all household members including males, adverse outcomes, and durability of lights (Appendix D); and
- Endline: sources of lighting, female participation in night time activities, use of lights, durability of lights, and sense of safety at night (Appendix E).

An initial visit was conducted at week one following light distribution to pilot the monitoring checklist and replace any handheld solar lights that were not functioning. Lights (if faulty) were only replaced during this week. The baseline and endline surveys were piloted before implementation and changes were made, as needed, to improve comprehension.

3.71 Study personnel and training

- One facilitator and two note takers participated in FGDs at baseline and endline. They received one day of training on qualitative research methods during which time they had opportunity to practice the skills.
- Twenty-two enumerators collected survey data at baseline and endline. They received one week of training in quantitative data collection methods prior to data collection.
- Four enumerators received one day of training on the monitoring visit questionnaire. Only four enumerators were used for monitoring because the interviews were shorter and it was a rolling data collection process over a month.
- Six data entry clerks received one day of training in data entry using Epi-Info.

3.72 Informed consent

Informed verbal consent was obtained from all participants prior to data collection (Appendix F). For baseline and endline surveys, informed consent was obtained by the interviewer from the head of the household and the randomly selected female in the selected household. If the selected female was younger than 18 years of age, assent was obtained by the interviewer only after a parent/guardian provided consent. For monitoring visits, informed consent was obtained from the selected female or other adult in the household.

3.73 Confidentiality

All enumerators were trained on procedures to ensure privacy and confidentiality of participants and signed a confidentiality agreement. A unique identifier was assigned to each household. The name of the participants was written on questionnaire forms, however, all information was de-identified during the data entry and analysis process. Hard copies of completed questionnaires are locked in storage cabinets in IRC and CDC offices.

3.74 Managing adverse events

A referral card with a list of services available for survivors of violence—embedded in a general list of health services, including which organizations and agencies provide these services—was offered to all participants who met any of the following criteria:

- Became upset during the interview; or
- Shared at any point during the interview that she did not feel safe in her current living situation, including in her home or community, and was likely to experience recurrent violence; or
- Disclosed experiencing violence.

3.8 Data Analysis

Focus group discussions: Content analysis was used to discern findings, using a comparative approach that examined differences between the two age groups (14-19 and 25-45 years old) and the camps. These age groups were chosen for FGDs in an attempt to make it easier to detect differences between the two age groups. Segments of responses to the questions were coded and similar codes were grouped into themes. Data were reviewed repeatedly and systematically until no new themes emerged. The maps were compared against findings from the FGDs and a composite of the perceived dangerous areas was developed for each camp. Results from the endline data were also compared to baseline FGD findings.

Household surveys: All data were double entered and reconciled prior to analyses. All analyses for the survey data used an infinite population assumption. For the combined camp analyses no sampling weighting was applied to the results. Descriptive analyses were conducted to assess the distribution of indicators. Chi-square and independent sample t-tests were used to compare categorical and continuous variables, respectively, by camp and age group. In cases where cell sizes were small, Fisher's Exact Test was used in place of Chi-square. Pooled variance t-tests and corresponding p-values were used when the group variances were equal, and the Satterthwaite method was used when variances were unequal. Monitoring visit data were used to determine the frequency of handheld solar light use among all household members by age category.

A Life-Table survival analysis approach was used to estimate handheld solar light retention over time. Survival at each time point was calculated using the number of people who still had their lights, those who had lost their lights (e.g., theft), and those who were lost to follow up. Those who had the light at endline or at a later monitoring visit were coded as having the light at all previous monitoring visits. Individuals who were not interviewed at any subsequent visit were considered lost to follow up.

For the indicator "sense of safety," a Fisher's Exact Test was used to test significance for the change in the indicators at endline between camps. Perceptions of safety were then analyzed to determine whether there was a significant change in indicators between baseline and endline surveys. Each of the six safety outcomes was modeled versus time (baseline to endline) and examined separately by camp. The safety outcomes included:

- Felt protected at night in general;
- Felt unprotected at night in general;
- Felt protected outside the home at night;
- Felt unprotected outside the home at night;
- Felt protected outside the home alone at night; and
- Felt unprotected outside the home alone at night.

Only households where the same woman was interviewed at both baseline and endline were included in the analysis of sense of safety variables (N=553) since perceptions of safety were presumed to vary from person to person, even within the same household. The percentage of those who responded 'yes'

to each outcome at baseline and endline, odds ratios, 95% confidence intervals and corresponding p-values, were reported. In consideration of correlated outcomes due to repeated measures in the same subject, a generalized estimating equation (GEE) model with a first-order autoregressive (AR1) correlation structure was used with subject as the cluster. The AR1 correlation structure was chosen to account for the correlation of error terms for the same female declining exponentially with distance which was appropriate for this study with women completing baseline and endline surveys [23].

Finally, following the same GEE procedures described above, each light source, night time activity, and security force outcomes was modeled versus time and examined by camp to determine if there was a significant change in these variables between baseline and endline.

4. RESULTS

Focus group discussions: A total of 80 and 82 respondents participated in the baseline and endline FGDs, respectively. The number of FGD participants varied between 8 and 12. Two FGDs with women and two with girls were held in each camp at baseline and at endline, for a total of 8 FGDs per camp. FGDs averaged 1 hour and 47 minutes, which included introductions, opening prayer, directions for and completion of the mapping exercise, and discussion of the questions. The mapping exercise took 15 minutes to complete, on average.

Household surveys: Final sample sizes for the household surveys are described in Table 4.0. Eighty-seven percent of the endline household survey participants were the same female from the same household as the baseline survey (n=553; Camp Sinai n=237, Camp Toto n=316). The remaining participants were different females from the same household and the same family; these females were interviewed due to unavailability of the originally selected female. From initiation of the baseline survey to completion of the endline survey, there was a 29% loss to follow-up. The number of households attempted to include in each survey was dependent on the outcome of prior surveys. For example, reporting that families moved out of the camp was the most common reason for not including a household in a subsequent survey. A detailed description of sample sizes and reasons for not completing interviews is available in Appendix G.

Table 4.0 Final Sample Sizes and Percentage Completed for Household Surveys

	Attempted	Final Sample Size	% Completed
Baseline	895	754	84.3
MV1	801	650	81.2
MV2	754	579	76.8
MV 3	721	572	79.3
Endline	720	634	88.1

Findings are reported below by evaluation objective, and further delineated by results from direct observation, FGDs, and household surveys, as applicable. With the exception of perceptions of safety, night time activities, sources of light, and presence of security forces, results at endline mirrored those found at baseline, therefore only endline results are reported below. Survey data is reported in total and by camp. While analyses were also conducted to compare indicators by age groups (14-19 year

olds and 20 years and older), few significant differences were noted across variables; therefore, these results are only included in the appendix (Appendix H).

4.1 Participant Characteristics and Night Time Activities

Demographic characteristics are reported below (Table 4.1.1). The average (mean) age of participants was 31 years old (median age = 28 years old), with 87% of participants being 20 years of age or older. While the average age of participants did not differ between camps, Camp Sinai had significantly more participants in the 14 to 19 year age group (17.0%) compared to Camp Toto (10.5%). More than half of participants reported some high school education (56.2%), while nearly one in 10 females reported never attending school (9.3%). Nearly two-thirds of females from Camp Toto reported some high school education (62.5%), while less than half of females from Camp Sinai reported this education (47.6%). More than one in 10 females from Camp Sinai (12.9%) reported no education, while only 6.6% of females in Camp Toto reported no education. Average household size was 4.2 with nearly half of the households having 4–5 household members (43.5%). Camp Toto reported a significantly higher average household size compared to Camp Sinai (4.4 vs 3.9). Participants reported living in the camps for 3.6 years, on average, with the majority living in the camp longer than 3 years (84.5%). Participants in Camp Sinai reported living in the camp for a significantly longer time than those in Camp Toto (3.7 vs 3.5 years).

Table 4.1.1 Endline demographic characteristics among females age ≥14 years in two camps in Haiti

	Total (N = 634)		Camp Sinai (n = 271)		Camp Toto (n = 363)		
Characteristic	N	%	N	%	N	%	p-value*
Age of selected female							
Average (SE)	31.1	0.5	30.4	0.7	31.6	0.6	0.184
Age of selected female categories							0.017
14 to 19	84	13.3	46	17.0	38	10.5	
20 and older	550	86.8	225	83.0	325	89.5	
Education of selected female							<0.001†
No school	59	9.3	35	12.9	24	6.6	
Primary level	193	30.4	102	37.6	91	25.1	
High school level	356	56.2	129	47.6	227	62.5	
Vocational or Literacy school	13	2.1	5	1.9	8	2.2	
College – certificate or diploma	10	1.6	0	0	10	2.8	
No response	1	0.2	0	0	1	0.3	
Don't know	2	0.3	0	0	2	0.6	
Number of Household members							
Average (SE)	4.2	0.1	3.9	0.1	4.4	0.1	<0.001
Number of household members categories							<0.001†
1	5	0.8	3	1.1	2	0.6	
2	84	13.3	44	16.2	40	11.0	
3	147	23.2	80	29.5	67	18.5	
4 to 5	276	43.5	108	39.9	168	46.3	

6 or more	119	18.8	35	12.9	84	23.1	
Missing	3	0.5	1	0.4	2	0.6	
Time in camp (years)							
Average (SE)	3.6	0.0	3.7	0.1	3.5	0.1	0.001
Time in camp categories							0.438
Under one year	17	2.7	11	4.1	6	1.7	
One to under two years	33	5.2	9	3.3	24	6.6	
Two to under three years	48	7.6	13	4.8	35	9.6	
Three or more years	536	84.5	238	87.8	298	82.1	

*Chi square p-value when categorical and t test statistic p-value when continuous for camp comparisons;
†Fischer's Exact tests were done.

Participants were asked about the reasons for night time activities outside of the house (Table 4.1.2). "Personal reasons" was the most commonly reported night time activity among females in Camp Sinai and Camp Toto at baseline and endline (Sinai 66.7% and 90.4%; Toto 68.2% and 77.4%, respectively). Among females who participated in both the baseline and endline survey, the odds of women in Camp Sinai and Camp Toto reporting going outside the house at night to buy water/food/gas/other at endline were 5.33 and 5.52 times greater than the odds of reporting this at baseline, respectively (p<0.001). In Camp Sinai, the odds of women reporting going outside the house at night for personal reasons were 4.54 times greater at endline than at baseline (p-value <0.001), while there was not a statistically significant change in Camp Toto (p-value 0.144). In both camps, there was no evidence of change in patterns of going out at night for work activities, religious purposes, or social reasons.

Table 4.1.2 Baseline and endline comparison of night time activities among females age ≥14 years in two camps in Haiti

Camp Sinai (N=237)	Baseline (% yes)	Endline (% yes)	Odds Ratio (CI)	p-value
Reasons for going out at night in the last week:				
Personal reasons (e.g., using the latrine)	66.7	90.4	4.54 (2.06, 10.01)	<0.001
Religious purposes (e.g., attending church)	50.0	53.0	1.05 (0.59, 1.90)	0.839
Needed to buy water/food/gas or other stuff	27.9	71.1	5.33 (3.36, 8.46)	<0.001
Social activities (e.g., visiting friends, or attending outdoor/ cultural activity)	24.2	25.3	1.04 (0.50, 2.13)	0.924
Work (e.g., selling)	16.7	9.64	0.55 (0.22, 1.38)	0.203
Camp Toto (N=316)	Baseline (% yes)	Endline (% yes)	Odds Ratio (CI)	p-value
Reasons for going out at night in the last week:				
Personal reasons (e.g., using the latrine)	68.2	77.4	1.58 (0.86, 2.90)	0.144
Religious purposes (e.g., attending church)	41.4	50.9	1.45 (0.83, 2.54)	0.195
Social activities (e.g., visiting friends, or attending outdoor/ cultural activity)	36.8	27.4	0.71 (0.37, 1.29)	0.259
Needed to buy water/food/gas or other stuff	28.5	70.8	5.52 (3.53, 8.62)	<0.001
Work (e.g., selling)	20.5	20.8	1.00 (0.50, 1.97)	0.991

4.2 Objective 1: Physical Environment Characteristics

Direct observation: During the baseline evaluation, several differences were noted in environmental characteristics between the two camps (Table 4.2.1). Camp Toto was primarily composed of wood shelters with a few meters distance between each household. In contrast in Camp Sinai, shelters were nearly all tents with little to no space between each household. Camp Toto had access to community and household electricity (illegally accessed), as well as solar street lights in public places, while Camp Sinai had only intermittent access to household electricity (illegally accessed from electrical lines) and no lighting in public places. Both camps were noted to have a presence of camp committee members, however, only Camp Toto had presence of MINUSTAH and PNH. Overall, Camp Toto covered a much larger area compared to Camp Sinai.

Table 4.2.1 Baseline Safety Audit Observations in Two Camps

	Camp Sinai	Camp Toto
Type of Shelter	Mostly Tent	Mostly Wood
Community Lighting		
Community electricity	No	Yes
Community solar street lights	No	Yes*
Household Lighting		
Household electricity	Yes*	Yes*
Candles	Yes	Yes
Flashlights	Yes, few	Yes, few
Phone flashlights	Yes, few	Yes, few
Gas lamps	No	Yes
Lighting in Public Places		
Water points	No	Yes
Latrines	No	Yes
Showers	No	Yes
Churches	No	Yes
Schools	No	Yes
Community building	No	Yes
Presence of actors		
MINUSTAH	No	Yes
PNH	No	Yes
Camp committee	Yes, few	Yes

*Electricity was accessed illegally. In Camp Sinai, it was noted to last only 15 minutes before power went out, while it stayed on for hours in Camp Toto.

During both baseline and endline safety audits, the team observed a limited access to electrical lighting. Once the power went out, few people made use of small flashlights (e.g., from mobile phones) and candles inside the house; candle use was reported as very dangerous. People tended to carry out social activities, such as eating, preparing food, and talking, in areas where electricity was provided, legally or not, or where street solar lights were available (Camp Toto). Few groups of people gathered

around the handheld solar lights and some used them to study on an individual basis. PNH was observed in Camp Toto, but not in Camp Sinai.

Focus group discussions: All participants actively participated in creating maps and defining areas of danger (Figure 1). The women were asked to specifically describe areas where young girls should not go within the camps. For Camp Sinai, these included: Zone A, the corner of Zone B, and Zone C near the abandoned school. In Toto, these areas included: behind the shelters in Plateau 1 (dark), the ravine area, latrines in Plateaus 2 and 3 (threat of flooding from the ravine), and crossing the road for water.

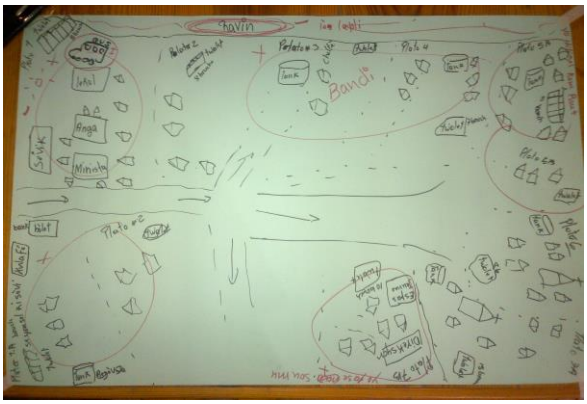


Figure 4.2.1 Example of Mapping Exercise

Participants described latrines as filthy, with odors that made people ill. In Camp Toto, women and adolescent girls were uncomfortable with the distance that they had to walk to get to latrines and to fetch water and the lack of health care within the camp. The women and girls complained that boys had stolen the latrine doors which faced the road so there was no privacy and that people defecated and urinated in front of and on the floor within the latrines. Lack of privacy in terms of being able to shower without boys and men watching was a common theme.

Household surveys: Twenty-eight percent of participants from Camp Sinai and 56.8% of participants from Camp Toto reported being able to go anywhere in the camp (Table 4.2.2). In Camp Sinai, the most commonly reported places that females recounted not going because it was unsafe included the airport road (27.7%), toilet area (25.8%), and roads surrounding the camp (23.6%). In Camp Toto, the most commonly reported places that females reported avoiding because it was unsafe included the ravine (15.2%) and area behind the toilets (8.5%).

Table 4.2.2 Endline results of locations avoided in the last week due to safety concerns among females age ≥14 years in two camps in Haiti

	Camp Sinai (n = 271)		Camp Toto (n = 363)	
Characteristic	N	%	N	%
Camp Sinai				
Able to go anywhere	76	28.0		
Road coming from airport	75	27.7		
Toilet area	70	25.8		
Roads surrounding the camp	64	23.6		
Site of former school in Section C	47	17.3		
Water locations	27	10.0		
Bottom of hill in Section D	24	8.9		
Entrance area to Block B	21	7.8		
Pathway to Block B	16	5.9		
Other location	18	6.6		

Don't know	4	1.5		
No response	1	0.4		
Camp Toto				
Able to go anywhere			206	56.8
Ravine			55	15.2
Behind toilets/latrines			31	8.5
Path to Camp Canaan			27	7.4
Carradeux Road			26	7.2
Path between Plateaux #1 and #7			21	5.8
Other location			20	5.5
Site of abandoned buses			15	4.1
Roads surrounding the camp			14	3.9
On the hills of Plateaux #7			14	3.9
No response			10	2.8
Don't know			5	1.4

4.3 Objective 2: Utility of Handheld Solar Lights Characteristics

Focus group discussions: There was agreement that women/mothers and girls used the handheld solar lights the most in the households. The lights were used for all daily activities, including cooking, lighting the house, going to the toilet, preparing for work, lighting vendor stalls, studying, reading, and identifying insects or animals. The solar light was available to all household members when needed, with the exception of when the light needed to be charged. There was agreement that the lights were easy to use, lightweight, and easy to charge. They liked being able to control the intensity of the light as they could set it on a lower intensity to increase the length of time that the charge would last. Some women suggested that everyone in the camp should have their own light and said that they would not sell the light, while others acknowledged that some had to sell their light as they were hungry and needed food. Participants clearly viewed the light as a valued commodity. A woman in Camp Sinai noted:

> *'With no electricity, we can be cocky ['chèlè] as we have a lamp. It makes us proud to feel special.'*

All participants verbalized that they felt more protected with the light. Reasons for the sense of perceived protection included: 1) eliminated potential of fire from candles; 2) could see the terrain better (including shadows that may indicate someone was following); 3) illuminated outside the house so that camp disturbances could be seen more clearly; 4) showed nuisance insects/animals; and 5) werewolves[1] were identifiable. They also reported economic protection as the light spared the necessity of buying candles and enabled selling items after dark.

[1] The concept of werewolves was described as both 'loup garou' and 'baka.' Field team members explained that a 'baka' is a human capable of transforming, during the night, into a spirit manifested in an animal body (such as cow or horse) that was capable of malicious actions. This description is similar to what is commonly referred to as a 'spirit possession.'

Two potential dangers related to using the lights were identified: 1) outsiders could see into tents as they passed by; and 2) having a light meant the potential for theft. Participants from Camp Toto described their fears:

> *'I am scared to go to some places for fear that people will take the lamp. There is a lot of theft of the solar panels.' 'I sleep with one eye open and one eye closed so that they won't steal my solar panel. They used to steal my clothes even when they were not fancy or attractive.'*

When asked about their ability to go to areas previously inaccessible to them, most groups mentioned their ability to go to the latrines, church, ravine (to throw trash) and shops. Areas perceived as too dangerous to go even with the light included Zone C (near abandoned school) in Camp Sinai and, in both camps, behind the latrines and anywhere men were smoking marijuana and drinking.

Household surveys: While there were numerous sources of lighting reported by participants during the endline survey (Table 4.3.1), the handheld solar light was by far the most common source reported for use both inside and outside the home (Inside: 84.8%; Outside: 70.9%). Telephone flash (Inside: 62.2%; Outside: 53.6%) and public electricity (Inside: 47.9%), and solar streetlights outside in Camp Toto (38.8%) were also common, but to a lesser extent. Of interest, 84.7% of households reported not having a working flashlight (excluding the handheld solar light).

Table 4.3.1 Endline results of use of lighting in the last week among females age ≥14 years in two camps in Haiti

	Total (N = 634)		Camp Sinai (n = 271)		Camp Toto (n = 363)		
Characteristic	N	%	N	%	N	%	p-value*
Sources of lighting INSIDE the house							
Handheld solar light	537	84.8	221	81.9	316	87.1	0.091
Telephone flash	394	62.2	163	60.4	231	63.6	0.402
Public electricity	302	47.9	164	61.2	138	38.0	<0.001
Candle	166	26.2	88	32.6	78	21.5	0.002
Traditional gas lamp	111	17.5	20	7.4	91	25.1	<0.001
Flashlight	79	12.5	26	9.6	53	14.6	0.062
Other	5	0.8	1	0.4	4	1.1	0.401
Sources of lighting OUTSIDE the house							
Handheld solar light	446	70.3	192	70.8	254	70.0	0.727
Telephone flash	339	53.5	143	52.8	196	54.0	0.797
Solar street lights	245	38.6	1	0.4	244	67.2	0.044
Public electricity	104	16.4	66	24.4	38	10.5	<0.001
Flashlight	70	11.0	25	9.2	45	12.4	0.209
Candle	69	5.7	35	12.9	34	9.4	0.151
Traditional gas lamp	40	6.3	12	4.4	28	7.7	0.095
Other	6	0.9	2	0.7	4	1.1	1.000
	Total (N = 634)		Camp Sinai (n = 271)		Camp Toto (n = 363)		
Number of working flashlights (excluding handheld solar light)							0.038
0	536	84.7	236	87.4	300	82.6	
1	87	13.7	33	12.2	54	14.9	

More than 1	9	1.4	1	0.4	8	2.2
Missing	1	0.2	0	0.0	1	0.3

*Chi square p-value

Analysis was conducted to identify changes in use of light sources from baseline to endline among females who completed both the baseline and endline surveys (Table 4.3.2). In both Camp Sinai and Camp Toto, the odds of women reporting candle use inside the house were decreased at endline (OR=0.06 and 0.20, respectively) compared to the odds of reporting candle use at baseline (p-value <0.001). In both Camp Sinai and Camp Toto, the odds of reporting gas lamp use inside the house at endline were decreased (OR=0.38 and 0.36, respectively) compared to the odds of reporting gas lamp use at baseline (p-value <0.001). In Camp Toto, the odds of reporting indoor use of a phone and flashlight were also decreased at endline (OR=0.67 and 0.54, respectively) compared to the odds of reporting phone and flashlight use at baseline (p-values 0.010 and <0.001, respectively).

Changes from baseline to endline were also noted in the use of light sources outside the house at night. In Camp Sinai and Camp Toto, the odds of reporting candle use were decreased at endline (OR=0.50 and 0.37, respectively) compared to the odds of reporting candle use at baseline (p-values 0.005 and <0.001, respectively). In Camp Sinai, the odds of reporting phone use as a source of lighting were increased at endline (OR=1.48) compared to the odds at baseline (p-value 0.030), while there was no evidence of change in the odds of phone use in Camp Toto (p-value 0.447). In Camp Toto, the odds of reporting flashlight use were decreased at endline (OR=0.59) compared to the odds of reporting flashlight use at baseline (p-value 0.004), while there was no evidence of change in the odds of reporting flashlight use in Camp Sinai (p-value 0.419).

Table 4.3.2 Baseline and endline comparison of sources of light use among females age ≥14 years with repeated measures in two camps in Haiti

Camp Sinai (N=237)	Baseline (% yes)	Endline (% yes)	Odds Ratio (CI)	p-value
Sources of lighting INSIDE the house				
Candle	88.0	31.1	0.06 (0.04, 0.10)	<0.001
Phone	59.6	57.9	0.93 (0.66, 1.30)	0.668
Gas Lamp	18.0	7.7	0.38 (0.22, 0.66)	<0.001
Flashlight	11.5	8.1	0.68 (0.37, 1.22)	0.196
Sources of lighting OUTSIDE the house				
Phone	40.8	50.6	1.48 (1.04, 2.12)	0.030
Candle	23.9	13.6	0.50 (0.31, 0.81)	0.005
Flashlight	9.2	7.2	0.77 (0.41, 1.46)	0.419
Gas Lamp	6.0	4.7	0.77 (0.34, 1.70)	0.515
Camp Toto (N=316)	Baseline (% yes)	Endline (% yes)	Odds Ratio (CI)	p-value
Sources of lighting INSIDE the house				
Phone	71.9	63.0	0.67 (0.49, 0.91)	0.010
Candle	56.6	20.3	0.20 (0.14, 0.27)	<0.001
Gas Lamp	47.9	25.0	0.36 (0.28, 0.47)	<0.001
Flashlight	23.6	14.2	0.54 (0.39, 0.75)	<0.001

Sources of lighting OUTSIDE the house				
Phone	56.4	53.5	0.89 (0.66, 1.20)	0.447
Candle	22.8	9.8	0.37 (0.23, 0.58)	<0.001
Flashlight	19.9	12.7	0.59 (0.42, 0.84)	0.004
Gas Lamp	19.5	7.9	0.36 (0.23, 0.55)	<0.001

Participants reported frequent use of the handheld solar light (Table 4.3.3). Nearly all (95.5%) reported using the handheld solar light at least one or more times per day and only 3.0% of participants reported using the light only once per week or never.

Table 4.3.3 Endline results for use of handheld solar lights among females age ≥14 years in two camps in Haiti

	Total (N = 634)		Camp Sinai (n = 271)		Camp Toto (n = 363)		
Characteristic	N	%	N	%	N	%	p-value
Frequency of handheld solar light use							0.492†
Never	15	2.4	8	3.0	7	1.9	
Once a week	4	0.6	3	1.1	1	0.3	
Once a day	256	40.4	108	39.9	148	40.8	
More than once a day	350	55.2	147	54.2	203	55.9	
No response	6	1.0	3	1.1	3	0.8	
Don't know	0	0.0	0	0.0	0	0.0	
Missing	3	0.5	2	0.7	1	0.3	

†Fischer's Exact tests were done.

Handheld solar light use outside the home at night was common among females in both camps and across age groups (Table 4.3.4). Among females who reported going out at night, 67.9% reported using the light at some point in the last week and 64.8% reported using it the very last time she went out at night. Similarly, among females who went out alone, seven of 10 reported using the light in the last week (69.6%) and 69.2% reported using it the very last time she went out. Lack of availability of the light was not a common reason given for not using the light (6.0% and 6.9% for light use in the last week; and 4.7% and 5.5% for light use the last time she went out). No differences in light use were found between camps or age groups.

Table 4.3.4 Endline results for use of handheld solar lights outside the home at night among females age ≥14 years in two camps in Haiti

	Total (N = 218)		Camp Sinai (n = 97)		Camp Toto (n = 121)		
Characteristic	N	%	N	%	N	%	p-value*
Use of handheld solar light in the last week when going out							0.256
Used it	148	67.9	67	69.1	81	66.9	
Did not use	55	25.2	20	20.6	35	28.9	
Light unavailable	13	6.0	8	8.3	5	4.1	
Never received	2	0.9	2	2.1	0	0	
Use of handheld solar light last time when going out							0.240
Used it	140	64.8	63	66.3	77	63.6	
Did not use	61	28.2	22	23.2	39	32.2	

Light unavailable	15	6.9	10	10.5	5	4.1	
Missing	2	0.9	2	2.1	0	0	
	Total (N = 148)		Camp Sinai (n = 64)		Camp Toto (n = 84)		
Use of the handheld solar light in the last week when she went out ALONE							0.323
Used it	103	69.6	47	73.4	56	66.7	
Did not use	36	24.3	13	20.3	23	27.4	
Light unavailable	7	4.7	3	4.7	4	4.8	
Never received	2	1.4	1	1.6	1	1.2	
Use of handheld solar light last time she went out ALONE							0.275
Used it	101	69.2	46	73.0	55	66.3	
Did not use	37	25.3	13	20.6	24	28.9	
Light unavailable	8	5.5	4	6.4	4	4.8	
Missing	2	1.4	1	1.6	1	1.2	

*Chi square p-value

The handheld solar lights were also highly popular among females in both camps and across age groups (Table 4.3.5). Nearly all participants (96.5%) reported they would recommend the light to friends and family, and 92.3% of participants reported they felt the handheld solar light that was distributed (the d.light S300 solar lantern) was better when compared to other lighting sources.

Table 4.3.5 Endline results of handheld solar light satisfaction among females age ≥14 years in two camps in Haiti

	Total (N = 634)		Camp Sinai (n = 271)		Camp Toto (n = 363)		
Characteristic	N	%	N	%	N	%	p-value*
Recommend handheld solar light to friends and family							0.302†
No	3	0.5	0	0	3	0.8	
Yes	612	96.5	262	96.7	350	96.4	
No response	3	0.5	2	0.7	1	0.3	
Missing	16	2.5	7	2.6	9	2.5	
Handheld solar light comparison to other lighting							0.148†
Better	585	92.3	252	93.0	333	91.7	
Same	16	2.5	4	1.5	12	3.3	
Worse	4	0.6	0	0	4	1.1	
No response	2	0.3	1	0.4	1	0.3	
Don't know	10	1.6	6	2.2	4	1.1	
Missing	17	2.7	8	3.0	9	2.5	

*Chi square p-value; † Fischer's Exact tests were done.

During monitoring visits, we also asked participants about solar light use among all household members (Appendix I). Use of lights was common among household members across age groups and for a variety of purposes (Table 4.3.6). Between 89.8% and 100.0% of individuals in each gender and age group reported use of the solar light in the last week. Lighting the room was the most commonly reported use at all monitoring visits regardless of sex or age group (81.4-99.6%). Among both females and males in the five to 13 year old and 14 to 19 year old age groups, using the light for the purpose of

reading was common (48.2%-90.7%), while charging their phones (50.6%-58.8%) and going to the toilet (39.9%-54.7%) were common among household members 20 years and older.

4.4 Objective 3: Durability of the Handheld Solar Light

Household surveys: Among endline households, 84.1% still owned the handheld solar light seven months following initial light distribution (Table 4.4.1). Seventy-eight percent of these households presented the light and solar panel upon request, with 94.6% of these lights being fully charged or on the charger. Among those who did not show their light, but reported still owning it, 47.2% reported it being charged away from the house, 16.7% let someone borrow it, and 12.5% reported it was being used away from the house.

Among participants who no longer owned the light, 69.6% reported theft of the lights and/or panel, 10.9% reported breakage, and 9.8% gave it as a gift. Participants reported having the light for 1.6 months, on average, before it was lost/stolen/broken/gifted/sold. Participants in Camp Sinai were significantly more likely to report the light/panel was stolen (70.0%) compared to those in Camp Toto (45.2%).

Table 4.4.1 Endline results of handheld solar light status among females age ≥14 years in two camps in Haiti

	Total (N = 634)		Camp Sinai (n = 271)		Camp Toto (n = 363)		
Characteristic	N	%	N	%	N	%	p-value*
Ownership of handheld solar light							0.012
Still owns it	533	84.1	215	79.3	318	87.6	
No longer owns it	92	14.5	50	18.5	42	11.6	
Missing	8	1.3	5	1.9	3	0.8	
	Total (N = 533)		Camp Sinai (n = 215)		Camp Toto (n = 318)		
Light shown or not (still owned)							0.849†
Light shown when asked	418	78.4	167	77.7	215	78.9	
Only light was shown	40	7.5	15	7.0	25	7.9	
Only panel was shown	3	0.6	1	0.5	2	0.6	
Missing	1	0.2	0	0.0	1	0.3	
Current charge status (still owned and shown)							0.021†
Charged	340	63.9	147	68.4	193	60.7	
On charger	164	30.9	54	25.1	110	34.6	
No time to charge	7	1.3	6	2.8	1	0.3	
Forgot to charge	6	1.1	3	1.4	3	0.9	
Broken solar panel	3	0.6	1	0.5	2	0.6	
Other	12	2.3	3	1.4	9	2.8	
Missing	1	0.2	1	0.5	0	0.0	
	Total (N = 72)		Camp Sinai (n = 33)		Camp Toto (n = 39)		
Current light status (still owned but not shown)							0.655†
Locked away in house	3	4.2	1	3.0	2	5.1	
Use away from house	9	12.5	4	12.1	5	12.8	

Charged away from house	34	47.2	19	57.6	15	38.5	
Kept away for safety	3	4.2	2	6.1	1	2.6	
Being Borrowed	12	16.7	4	12.1	8	20.5	
Missing	10	13.9	3	9.1	7	18.0	
No response	1	1.4	0	0	1	2.6	
	Total (N = 92)		Camp Sinai (n = 50)		Camp Toto (n = 42)		
Status of solar light (no longer owned)							0.010†
Light/Panel Stolen	64	69.6	40	80.0	24	57.1	
Light/Panel/Cable Broken	11	10.9	0	0.0	10	23.8	
Gave light as a gift	9	9.8	4	8.0	5	11.9	
Never received light	1	1.1	1	2.0	0	0.0	
Other	8	8.7	5	10.0	3	7.1	
Length of time before light was stolen/broken/gifted (months)							
Average (SE)	1.6	0.2	1.7	0.3	1.5	0.3	0.701

*Chi square p-value; † Fischer's Exact tests were done.

Light maintenance was also reported on in the endline survey (Table 4.4.2). Participants reported it took, on average, 5.3 hours to charge the light. About half of participants (51.7%) felt it doesn't take too long to charge, while less than one-third (30.8%) felt it does take too long. Durability of the lights was high with three-quarters of endline survey participants reporting nothing had broken on the light (76.2%). Among females who reported breakage, one-third (32.6%) reported the light still works. Among those who reported having their light fixed, 72.2% said they did not have to pay to have it fixed.

Table 4.4.2 Endline results of handheld solar light maintenance among females age ≥14 years in two camps in Haiti

	Total (N = 634)		Camp Sinai (n = 271)		Camp Toto (n = 363)		
Characteristic	N	%	N	%	N	%	p-value*
Length of time to charge the solar light (in hours)							
Average (SE)	5.3	0.2	5.0	0.2	5.7	0.2	0.035
Perception of lengthiness of charge time							0.014
Not too long	328	51.7	159	58.7	169	46.6	
Takes too long	195	30.8	69	25.5	126	34.7	
Don't know	90	14.2	34	12.6	56	15.4	
No response	3	0.5	1	0.4	2	0.6	
Missing	18	2.84	8	3.0	10	2.8	
Light/panel/cable has broken							0.033†
Nothing broke	483	76.2	213	78.6	270	74.4	
Lamp only	22	3.5	3	1.1	19	5.2	
Panel only	12	1.9	4	1.5	8	2.2	
Cable only	45	7.1	14	5.3	31	8.5	
Panel and cable	4	0.6	2	0.7	2	0.6	
Light and panel	2	0.3	1	0.4	1	0.3	
No response	1	0.3	0	0.0	1	0.3	
Don't know	3	0.4	2	0.7	1	0.3	

Missing	62	9.8	32	11.8	30	8.3	
	Total (N = 89)		Camp Sinai (n = 26)		Camp Toto (n = 63)		
Light/panel/cable has been fixed							0.285
No - still broken	23	25.8	2	7.7	21	33.3	
No - still works	11	12.4	2	7.7	9	14.3	
Yes	18	20.2	0	0.0	18	28.6	
Don't know	1	1.1	1	3.9	0	0.0	
Missing	35	39.3	21	80.8	14	22.2	
	Total (N = 18)		Camp Sinai (n = 0)		Camp Toto (n = 18)		
Average time taken to fix the solar light							-
Less than 1 day	3	16.7	0	0.0	3	16.7	
1 day or more	7	38.9	0	0.0	7	38.9	
Missing	8	44.4	0	0.0	8	44.4	

*Chi square p-value when categorical, t test statistic p-value when continuous; † Fischer's Exact tests were done.

Survival analysis further supports findings from the endline survey that retention of the lights over time was high (Table 4.4.3 and Figure 2). The probability of having the light at MV1 was 100%; zero people had lost their light by MV1 and 28 were lost to follow up (labeled as censored) between baseline and MV1. Those who were lost to follow up were no longer included in subsequent analysis. The probability of having the light at MV2 was 96%; 29 people lost their light between MV1 and MV2 and 12 people were lost to follow up during that period. The probability of having the light at MV3 was 91.8%; 30 people lost their light between MV2 and MV3 and 12 people were lost to follow up between MV2 and MV3. Finally, the probability of having the light at Endline was 87.9%; 26 people lost their light between MV3 and the endline visit and 52 people were lost to follow up during that same period. At the endline visit, 533 of the original 758 participants still had their light and only 121 participants had lost the light during the course of the evaluation.

Table 4.4.3 Results of life table survival estimates of handheld solar lights among females age ≥14 years in two camps in Haiti

Time (t)	Total Number at Risk (l_t)	Number Failed (d_t)	Number Censored (w_t)	Effective Sample Size (l'_t)	Probability of Survival (p_t)	Probability of Failure (q_t)	Survival Standard Error (SEq_t)
Baseline	758	0	28	744	100.0	0.0	0.0
MV1 (1 month)	730	29	12	724	100.0	0.0	0.0
MV2 (3 months)	689	30	12	683	96.0	4.0	0.7
MV3 (5 months)	647	26	52	621	91.8	8.2	1.0
Endline (7 months)	569	36	533	302.5	87.9	12.1	1.2

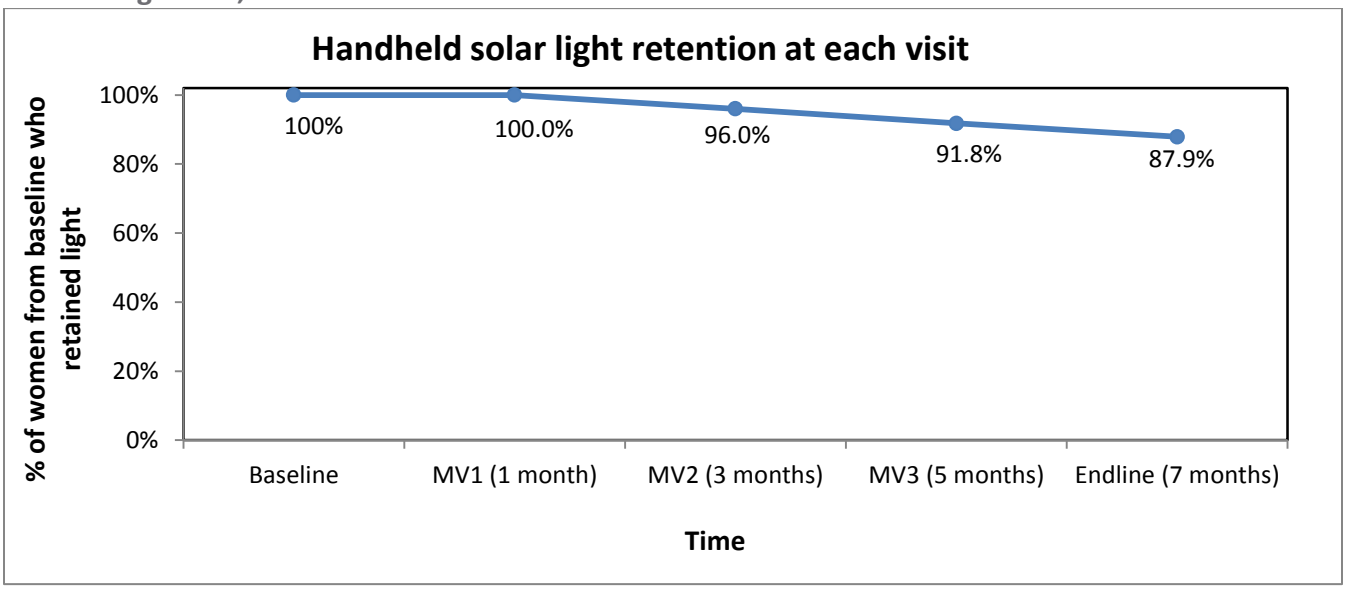
l'_t = l^t - (w_t/2) where l_t = total number at risk – (1/2) number censored

q_t = d_{t-1} / l'_{t-1} * d_{t-1} / l'_{t-1} where q_t = the number that failed at time t (current visit) / effective sample size at time t multiplied by q_{t-1}, or the probability of failure at time t-1 (the previous visit)

p_t = 1-q_t where p_t = 1 - the failure probability at time t

NOTE: Censoring: Missing observations for remaining visits, Failure: Loss of the solar light

Figure 4.4.1 Handheld solar light retention at baseline, monitoring visit 1, monitoring visit 2, monitoring visit 3, and endline



4.5 Objective 4: Sense of Safety

Focus group discussions: When asked what scared the women and adolescent girls, there were few differences in responses between the ages or the camps. Participants again emphasized the camps as insecure places to live, in which there were multiple threats. Women feared men that engaged in drinking alcohol and smoking marijuana, which made their behaviors unpredictable. As one woman in Camp Sinai described:

> *'This area, where we are sitting [abandoned school, site of the FGD discussions] is the most dangerous; you should not pass through here. Always there is something happening and fighting. The men are always drunk – they drink daily, the drink is like their food. This happens every day as the men don't work.'*

Fighting (between men, between women, young girls against young men and vice versa, and intimate partner violence) was an everyday occurrence. Women from Camp Sinai described the physical violence against women:

> '*Men are always beating their women, a lot of beating.' 'Recently, two boys from camp whipped [beat] a pregnant woman and killed the baby from her belly.' 'When the guys have no money to give to the ladies, this forces them to beat the ladies.'*

Being constantly harassed by men was a way of life for these women and adolescent girls – the girls talked about the rude comments made to them by the men and boys, with an accompanying threat of later violence against the girls if the girls did not comply with the wishes of the men and boys.

Participants described, more so in Camp Sinai, fears of being hurt by men throwing glass bottles and rocks and stabbing people with knives, particularly machetes. Gun shots were heard frequently and participants talked about situations in which guns were used to threaten them or they witnessed an episode involving a gun with others. As one young girl in Camp Sinai commented:

'Razors can cut the tents. If razors can cut, what can a gun do?'

Virtually everyone discussed frequent slashing of tents with razors from thieves, sometimes accompanied by the threat of physically harming the tent occupants. While some participants lived in wooden shelters in Camp Toto, these shelters were not perceived to be much better for protection than tents. As a woman from Toto said:

'The shelter is just a piece of wood. This doesn't provide security, you can only trust in God.'

All participants feared rapists and viewed some of the men/boys in camp as potential rapists. Some of the examples of rapes in the camp were recent, while some were mentioned as occurring a few years earlier in these or other camps. Several examples were given of rapes that resulted in prison sentences for the rapists; while other stories emphasized that the perpetrator(s) still lived in the camps and caused them fear. Only in Camp Toto was there mention of lesbians raping girls; lesbians were viewed as a threat and discussed negatively.

Concerns about 'magic' (voodoo practices) and werewolves were prevalent. These fears meant that the females stayed indoors and tried to stay hidden. Strangers were perceived to be a big problem in the camps, with complaints that there was minimal to no security by officials (PNH and/or MINUSTAH forces). Participants described knowing each other in the camp and being able to recognize strangers, particularly in Camp Toto.

The infrastructure of the camps was described as inadequate, lacking gates, fences, cement blocks and personnel to monitor who is entering or leaving the camp, which allowed cars and strangers to come freely in and out of the camps. Participants talked about fearing criminals entering the camp and hiding from the police in the tents.

Motor vehicles, both cars and motorcycles, were seen as major problems for speeding through camps and surrounding roads; kicking up rocks that were propelled into tents and shelters, hitting children, shelters/tents, and smashing into sidewalk stands where some camp women sold various items.

In both camps, women and girls recounted an episode that made them fearful of both eviction and purposeful burning of the camp. During the baseline, the groups described a story of a known politician that surrounded himself by thugs who threatened camp residents with eviction and the burning of the camp, if they did not cooperate with his demands.

In addition to asking what scared the women and girls, we asked what made them 'uneasy' or 'afraid' in an effort to triangulate questions in order to fully capture the concept of fear in Creole. The women strongly answered this question by saying 'living in the camp.' There was a lot of discussion about the

lack of community cohesion and the lack of respect among the camp residents toward one another. The females from both camps reported fears of getting into altercations with neighbors and talked about staying away from them or trying to calm situations when others were angry.

Lack of protection from the PNH and/or MINUSTAH forces was perceived to be an on-going problem that made participants fearful. Many noted that, for about a year following the earthquake in 2010, police protection was much better in the camps, plus community brigades operated. Participants now felt that protection was lacking.

Household surveys: Nearly two-thirds of endline participants reported not going outside the home at night (65.6%). The most common reasons for not going outside the home at night were not feeling protected (73.4%) and being instructed not to by a parent/guardian (21.3%). Among females who did not go outside the home at night, 90.4% of Camp Toto participants reported they did not go outside because they felt unprotected. In Camp Sinai, 50.5% reported they did not go outside because they felt unprotected and 42.3% reported they did not go outside because they were instructed not to by a parent/guardian. Among females who reported going outside at night, one-third reported not going out at night ALONE (31.8%). Feeling unprotected was the most common reason for not going out at night ALONE (57.1%).

Table 4.5.1 Endline results for reasons females age ≥14 years reported for not going out at night in two camps in Haiti

	Total (N = 634)		Camp Sinai (n = 271)		Camp Toto (n = 363)		
Characteristic	N	%	N	%	N	%	p-value*
Stayed inside at night	415	65.6	176	64.9	239	66.0	
	Total (N = 415)		Camp Sinai (n = 176)		Camp Toto (n = 239)		
Reasons for not going out (1 missing)							<0.001†
Feeling unprotected	304	73.4	88	50.3	216	90.4	
Instructed by parent/guardian	88	21.3	74	42.3	14	5.9	
Instructed by husband	10	2.4	5	2.9	5	2.1	
Instructed by parent/guardian and did not feel protected	7	1.7	5	2.9	2	0.8	
Instructed by husband and did not feel protected	1	0.2	0	0	1	0.4	
Other	4	1.0	3	1.7	1	0.4	
	Total (N = 220)		Camp Sinai (n = 99)		Camp Toto (n = 121)		
Did not go outside the home at night ALONE	70	31.8	33	33.3	37	30.6	
	Total (N = 70)		Camp Sinai (n = 33)		Camp Toto (n = 37)		
Reasons for not going out ALONE (1 missing)							0.033†
Feeling unprotected	40	57.1	16	48.5	24	64.9	
Instructed by parent/guardian	22	31.4	14	42.4	8	21.6	
Instructed by husband	3	4.3	0	0.0	3	8.1	
Instructed by parent/guardian and did not feel protected	2	2.9	2	0.1	0	0.0	
Instructed by husband and did	1	1.4	0	0.0	1	2.7	

not feel protected							
Other	1	1.4	0	0.0	1	2.7	

*Chi square p-value; † Fischer's Exact tests were done.

At endline, differences in female's perceptions of feeling protected (Table 4.5.2) and *unprotected* (Table 4.5.3) at night were noted between camps.

More than half of participants reported feeling protected against crime at night (56.8%), while 44.5% reported feeling unprotected from crime at night. The most commonly reported reasons for feeling protected at night included MINUSTAH (53.1%), PNH (52.5%), and God (50.6%), while the ability of people to slash tents (54.1%), thugs (47.7%), and loud noise/cursing (46.6%) were the most common reasons for feeling *unprotected*. Participants in Camp Sinai were significantly less likely to report feeling protected at night (24.4% vs 81.0%) and more likely to report feeling *unprotected* at night (77.1% vs 20.4%) compared to those in Camp Toto.

Among participants who reported going outside the home at night, 58.2% reported feeling protected against crime and 44.5% reported feeling *unprotected* from crime. The most common reasons for feeling protected outside the home at night included PNH (53.9%), MINUSTAH (51.6%), and God (46.9%), while thugs (58.8%), ability to slash tents (39.2%), and loud noise/cursing (38.1%) were the most common reasons for feeling *unprotected*. Nearly 20% of participants who went outside the home at night reported fear of sexual violence as a reason for feeling *unprotected* (19. 6%). Participants in Camp Sinai were significantly less likely to report feeling protected (22.4% vs 86.9%) and significantly more likely to report feeling *unprotected* (76.0% vs 17.4%) compared to those in Camp Toto.

Table 4.5.2 Endline results regarding perception of feeling protected from crime at night among females age ≥14 years in two camps in Haiti

	Total (N = 634)		Camp Sinai (n = 271)		Camp Toto (n = 363)		
Characteristic	N	%	N	%	N	%	p-value*
Felt protected against crime	360	56.8	66	24.4	294	81.0	<0.001
	Total (N = 360)		Camp Sinai (n = 66)		Camp Toto (n = 294)		
Reasons for feeling protected against crime							
Presence of MINUSTAH	191	53.1	3	4.6	188	63.9	<0.001
Presence of PNH	189	52.5	15	22.7	174	59.2	<0.001
God	182	50.6	37	56.1	145	49.3	0.323
Lighting in the camp	71	19.7	2	3.0	69	23.5	<0.001
Presence of a Camp Committee	35	9.7	4	6.1	31	10.5	0.359
Using the handheld solar light	27	7.5	7	10.6	20	6.8	0.290
Brigade (community patrolling)	25	6.9	13	19.7	12	4.1	<0.001
Walking with others in a group	19	5.3	8	12.1	11	3.7	0.006
Presence of women's groups	9	2.5	3	4.6	6	2.0	0.217†
Gate at entrances	9	2.5	0	0.0	9	3.1	0.375†
Enclosure surrounding the camp	3	0.8	0	0.0	3	1.0	1.000†
Other	52	14.1	8	12.1	44	15.0	0.699
	Total (N = 220)		Camp Sinai (n = 98)		Camp Toto (n = 122)		
Felt protected against crime	128	58.2	22	22.5	106	86.9	<0.001

outside the Home							
	Total (N = 128)		Camp Sinai (n = 22)		Camp Toto (n = 106)		
Reasons for feeling protected against crime outside the home							
Presence of PNH	69	53.9	2	9.1	67	63.2	<0.001
Presence of MINUSTAH	66	51.6	0	0.0	66	62.3	<0.001
God	60	46.9	11	50.0	49	46.2	0.749
Lighting in the camp	42	32.8	1	4.6	41	38.7	0.001
Walking with others in a group	29	22.7	11	50.0	18	17.0	0.001
Using the handheld solar light	18	14.1	2	9.1	16	15.1	0.737
Presence of a Camp Committee	9	7.0	0	0.0	9	8.5	0.357†
Gate at entrances	3	2.3	0	0.0	3	2.8	1.000†
Presence of women's groups	2	1.6	1	4.6	1	0.9	0.315†
Brigade (community patrolling)	0	0.0	0	0.0	0	0.0	-
Enclosure surrounding the camp	0	0.0	0	0.0	0	0.0	-
Other	15	11.7	3	13.6	12	11.3	0.722
	Total (N = 146)		Camp Sinai (n = 63)		Camp Toto (n = 83)		
Felt protected against crime outside the home when ALONE	81	55.5	12	19.1	69	83.1	<0.001
	Total (N = 81)		Camp Sinai (n = 12)		Camp Toto (n = 69)		
Reasons for feeling protected against crime outside the home when ALONE							
Presence of MINUSTAH	47	58.0	0	0.0	47	68.1	<0.001
Presence of PNH	47	58.0	0	0.0	47	68.1	<0.001
God	45	55.6	8	66.7	37	53.6	0.534
Lighting in the camp	30	37.0	0	0.0	30	43.5	0.003
Using the handheld solar light	12	14.8	2	16.7	10	14.5	1.000
Presence of a Camp Committee	8	9.9	0	0.0	8	11.6	0.597†
Walking with others in a group	6	7.4	3	25.0	3	4.4	0.039†
Brigade (community patrolling)	2	2.5	1	8.3	1	1.5	0.276†
Gate at entrances	2	2.5	0	0.0	2	2.9	1.000†
Enclosure surrounding the camp	2	2.5	1	8.3	1	1.5	0.276†
Presence of women's services/groups	1	1.2	1	8.3	0	0.0	0.149†
Other	6	7.4	1	8.3	5	7.3	1.000†

*Chi square p-value; † Fischer's Exact tests were done.

Among participants who reported going outside the home ALONE at night, 19.1% and 83.1% from Camp Sinai and Camp Toto, respectively, reported feeling protected against crime. Overall, the most commonly reported reasons for feeling protected outside the home ALONE at night included MINUSTAH (58.0%), PNH (58.0%) and God (55.6%), while thugs (67.7%), physical violence (39.7%), and loud noise/cursing (35.3%) were the common reasons for feeling *unprotected*. Participants in Camp Sinai were significantly less likely to report feeling protected (19.1% vs 83.1%) and significantly more likely to report feeling *unprotected* (81.8% vs 16.7%) compared to those in Camp Toto. Participants in Camp Toto were significantly more likely to report lighting in the camp (43.5% vs 0.0%), MINUSTAH (68.1% vs 0.0%), and PNH (68.1% vs 0.0%) as reasons for feeling protected, and less likely to report

walking in a group (4.4% vs 25.0%) compared to participants in Camp Sinai. Participants in Camp Sinai were significantly more likely to report thugs (74.1%), hearing gun shots (42.6%) and physical violence (50.0%) as reasons for feeling *unprotected* compared to those in Camp Toto (42.9%, 0.0%, 0.0%).

Table 4.5.3 Endline results regarding perception of feeling *unprotected* from crime at night among females age ≥14 years in two camps in Haiti

	Total (N = 634)		Camp Sinai (n = 271)		Camp Toto (n = 363)		
Characteristic	N	%	N	%	N	%	p-value*
Felt *unprotected* from crime	283	44.6	209	77.1	74	20.4	<0.001
	Total (N = 283)		Camp Sinai (n = 209)		Camp Toto (n = 74)		
Reasons for feeling *unprotected*							
Ability of people to slash tents	153	54.1	122	58.4	31	41.9	0.015
Thugs	135	47.7	113	54.1	22	29.7	0.0003
Loud noise/cursing	132	46.6	103	49.3	29	39.3	0.135
Physical violence	122	43.1	111	53.1	11	14.9	<0.001
Rock/bottle throwing	96	33.9	87	41.6	9	12.3	<0.001
Hearing gun shots	86	30.4	84	40.2	2	2.7	<0.001
Werewolves	63	22.3	37	17.7	26	35.1	0.002
Insufficient camp lighting	37	13.1	29	13.9	8	10.8	0.502
Sexual violence	26	9.2	24	11.5	2	2.7	0.032
Harassment	21	7.4	11	5.3	10	13.5	0.020
No gate at entrances	16	5.7	14	6.7	2	2.7	0.254
Other	26	9.2	19	9.1	7	9.5	0.925
No Response	1	0.4	0	0.00	1	1.4	0.262
	Total (N = 218)		Camp Sinai (n = 97)		Camp Toto (n = 121)		
Felt *unprotected* from crime <u>outside the Home</u>	97	44.5	76	76.0	21	17.4	<0.001
	Total (N = 97)		Camp Sinai (n = 76)		Camp Toto (n = 21)		
Reasons for feeling *unprotected* from crime <u>outside the home</u>							
Thugs	57	58.8	47	61.8	10	47.6	0.244
Ability of people to slash tents	38	39.2	27	35.5	11	52.4	0.164
Loud noise/cursing	37	38.1	32	42.1	5	23.8	0.129
Hearing gun shots	34	35.1	33	43.4	1	4.8	0.001
Physical violence	28	28.9	27	35.5	1	4.8	0.006
Rock/bottle throwing	22	22.7	19	25.0	3	14.3	0.387
Insufficient camp lighting	21	21.7	14	18.4	7	33.3	0.144
Sexual violence	19	19.6	17	22.4	2	9.5	0.231
Werewolves	16	16.5	10	13.2	6	28.6	0.094
Harassment	8	8.3	4	5.3	4	19.1	0.064†
No gate at entrances	6	6.2	6	7.9	0	0.0	0.335†
Other	8	8.3	6	7.9	2	9.52	1.000†
	Total (N = 150)		Camp Sinai (n = 66)		Camp Toto (n = 84)		
Felt *unprotected* from crime <u>outside the home</u> when ALONE	68	45.3	54	81.8	14	16.7	<0.0001

	Total (N = 68)		Camp Sinai (n = 54)		Camp Toto (n = 14)		
Reasons for feeling *unprotected* from crime <u>outside the home</u> when ALONE							
Thugs	46	67.7	40	74.1	6	42.9	0.027
Physical violence	27	39.7	27	50.0	0	0.0	0.000
Loud noise/cursing	24	35.3	22	40.7	2	14.3	0.114
Hearing gun shots	23	33.8	23	42.6	0	0.0	0.002
Ability of people to slash tents	22	32.4	18	33.3	4	28.6	1.000
Rock/bottle throwing	18	26.5	16	29.6	2	14.3	0.323
Sexual violence	13	19.1	13	24.1	0	0.0	0.055
Insufficient camp lighting	13	19.1	10	18.5	3	21.4	1.000
Werewolves	13	19.1	9	16.7	4	28.6	0.445
Harassment	6	8.8	4	7.4	2	14.3	0.596†
No gate at entrances	1	1.5	1	1.9	0	0.0	1.000†
Other	6	8.8	5	9.3	1	7.1	1.000†

*Chi square p-value; † Fischer's Exact tests were done.

Comparisons of results for perceptions of safety at night between baseline and endline among females who completed both interviews are reported in Table 4.5.4. In Camp Sinai, the odds of reporting feeling protected at night were decreased at endline (OR=0.43) compared to the odds of reporting feeling protected at baseline (p-value <0.001), while there was no evidence of change in perceptions of protection among females in Camp Toto (p-value 0.524). Similarly, in Camp Sinai, the odds of reporting feeling *unprotected* from crime at night were 2.22 times greater at endline than the odds of reporting this at baseline (p-value <0.001); there was no evidence of change in Camp Toto (p-value 0.614).

In Camp Sinai, the odds of reporting feeling protected from crime when <u>outside the home</u> at night were decreased at endline (OR=0.37) compared to the odds of reporting this at baseline (p-value <0.001). In contrast in Camp Toto, the odds of reporting feeling protected from crime when <u>outside the home</u> at night were 2.18 times greater at endline compared to baseline (p-value 0.016). In Camp Sinai, the odds of reporting feeling *unprotected* from crime outside the home at night were 3.35 times greater at endline compared to baseline (p-value <0.001), while there was no evidence of change in perceptions of feeling *unprotected* outside at night among females in Camp Toto (p-value 0.061).

Comparable patterns are noted in perceptions of safety <u>outside the home when alone</u> at night. In Camp Sinai, the odds of reporting feeling protected from crime when outside the home when alone at night were decreased at endline (OR=0.27) compared to the odds of reporting this at baseline (p-value <0.001), while there was no evidence of change in perceptions of protection among females in Camp Toto (p-value 0.056). In Camp Sinai, the odds of feeling *unprotected* from crime outside the home alone at night were 4.53 times greater at endline compared to the odds of reporting this at baseline (p-value <0.001), while there was no evidence of change in perceptions of feeling *unprotected* outside alone at night among females in Camp Toto (p-value 0.130).

Table 4.5.4 Baseline and endline comparison of perceptions of safety at night among females with repeated measures age ≥14 years in two camps in Haiti

Camp Sinai (N=237)	Baseline (% yes)	Endline (% yes)	Odds Ratio (CI)	p-value
Feelings of protection at night				
Feel protected from crime	41.7	24.4	0.43 (0.31, 0.61)	<0.001
Feel *unprotected* from crime	61.5	78.0	2.22 (1.55, 3.20)	<0.001
Feel protected from crime when out*	46.2	23.8	0.37 (0.22, 0.62)	<0.001
Feel *unprotected* from crime when out?*	50.3	77.1	3.35 (1.86, 6.03)	<0.001
Feel protected from crime when out ALONE?**	46.0	18.5	0.27 (0.13, 0.56)	<0.001
Feel *unprotected* from crime when out ALONE?**	51.9	82.5	4.53 (1.94, 10.62)	<0.001
Camp Toto (N=316)	Baseline (% yes)	Endline (% yes)	Odds Ratio (CI)	p-value
Feelings of protection at night				
Feel protected from crime	79.4	81.3	1.13 (0.78, 1.62)	0.524
Feel *unprotected* from crime	20.8	19.3	0.91 (0.63, 1.31)	0.614
Feel protected from crime when out*	76.1	86.8	2.18 (1.16, 4.10)	0.016
Feel *unprotected* from crime when out?*	25.8	17.1	0.57 (0.32, 1.03)	0.061
Feel protected from crime when out ALONE?**	71.1	84.0	2.14 (0.98, 4.65)	0.056
Feel *unprotected* from crime when out ALONE?**	25.6	15.8	0.54 (0.24, 1.20)	0.130

NOTE: *Question was asked only to females who left their house at night

NOTE: **Question was asked only to females who left their house at night alone

At endline, females were asked about factors that would make them feel more protected from crime. The list of factors was not read to participants, but rather participants were encouraged to list factors spontaneously based on their own perceptions. The most commonly reported factors included more presence of PNH (67.0%), more presence of MINUSTAH (39.6%), and more presence of a brigade in the area (27.6%) (Table 4.5.5). About 11% of participants reported (without having response options read to them) that having more handheld solar lights would make them feel more protected.

Also at endline, females in Camp Sinai were significantly more likely compared to those in Camp Toto to report the following factors that would make them feel more protected: living in a shelter rather than a tent (28.0% vs 14.9%), a gate at the entrance (8.5% vs 1.7%), an enclosure around the camp (13.7% vs 2.5%), more brigades (39.5% vs 18.7%), and walking in a group (4.4% vs 1.1%). Participants in Camp Toto were significantly more likely compared to those in Camp Sinai to report solar street lights (36.2% vs 11.4%) and more MINUSTAH (48.8% vs 27.3%) as factors that would make them feel more protected.

Table 4.5.5 Endline results of factors that would make females feel more protected among females age ≥14 years in two camps in Haiti

	Total (N = 634)		Camp Sinai (n = 271)		Camp Toto (n = 363)		
Characteristic	N	%	N	%	N	%	p-value*
Factors that would make females feel more protected from crime at night							
Nothing would make me feel safer	42	6.6	14	5.2	28	7.7	0.202
More presence of PNH	425	67.0	187	69.0	238	65.6	0.363
More presence of MINUSTAH	251	39.6	74	27.3	177	48.8	<0.001

Better lighting in the camp	186	28.3	87	32.1	99	27.3	0.187
More presence of a brigade	175	27.6	107	39.5	68	18.7	<0.001
More solar street lights	162	25.6	31	11.4	131	36.2	<0.001
Living in a shelter vs. a tent	130	20.5	76	28.0	54	14.9	<0.001
More camp committee	72	11.4	36	13.3	36	9.9	0.187
More handheld solar lights	69	10.9	30	11.1	39	10.7	0.896
Enclosure surrounding the camp	46	7.3	37	13.7	9	2.5	<0.001
Gate at entrances of camp	29	4.6	23	8.5	6	1.7	<0.001
Walking with others in a group	16	2.5	12	4.4	4	1.1	0.010
More women's services/groups	7	1.1	4	1.5	3	0.8	0.468†
Other	36	5.7	10	3.7	26	7.2	0.062
No response	3	0.5	1	0.4	2	0.6	1.000†
Don't know	9	1.4	3	1.1	6	1.7	0.739†
Presence seen in the camp in the last week							
PNH	446	70.5	131	48.5	315	86.8	<0.001
Camp committee member	440	69.7	125	46.3	315	87.3	<0.001
NGO staff	408	64.5	152	56.3	256	70.5	<0.001
Women's services / groups	394	62.3	131	48.7	263	72.5	<0.001
MINUSTAH	393	62.3	53	19.6	340	93.9	<0.001
Brigade member	170	26.9	56	20.8	114	31.4	0.002

*Chi square p-value; † Fischer's Exact tests were done.

Participants in Camp Toto were significantly more likely to report seeing a presence of MINUSTAH (93.9% vs 19.6%), PNH (86.8% vs 48.5%), Camp Committee (87.3% vs 46.3%), brigade (31.4% vs 20.8%), NGO member (70.5% vs 56.3%), and women's groups (72.5% vs 48.7%) in the camp in the last week compared to participants in Camp Sinai.

Analysis was also conducted to identify changes in the presence of security forces from baseline to endline among females who completed both the baseline and endline surveys (Table 4.5.6). In Camp Sinai, the odds of reporting seeing PNH were 1.99 times greater at endline compared the odds of this at baseline (p-value <0.001); there was no evidence of change in the odds of reporting seeing MINUSTAH, camp committee, or brigade (p-value 0.617, 0.099, 0.166, respectively). In Camp Toto, the odds of reporting seeing MINUSTAH and brigade were decreased (OR=0.37, 0.67, respectively) at endline compared to baseline (p-values 0.045 and 0.007, respectively); there was no evidence of change in the odds of reporting seeing PNH or camp committee (p-values 0.234 and 0.423).

Table 4.5.6 Baseline and endline comparison of presence of security forces seen among females age ≥14 years with repeated measures in two camps in Haiti

Camp Sinai (N=237)	Baseline (% yes)	Endline (% yes)	Odds Ratio (CI)	p-value
Seen in last week				
Camp committee	41.4	48.4	1.34 (0.95, 1.90)	0.099
PNH	31.3	47.4	1.99 (1.39, 2.83)	<0.001
Brigade	27.4	22.2	0.76 (0.51, 1.12)	0.166
MINUSTAH	17.3	19.2	1.13 (0.71, 1.78)	0.617

Camp Toto (N=316)	Baseline (% yes)	Endline (% yes)	Odds Ratio (CI)	p-value
Seen in last week				
MINUSTAH	98.4	95.8	0.37 (0.14, 0.98)	0.045
PNH	91.5	88.8	0.74 (0.45, 1.21)	0.234
Camp committee	86.8	88.7	1.18 (0.79, 1.78)	0.423
Brigade	45.6	35.4	0.67 (0.50, 0.90)	0.007

5. DISCUSSION

5.1 Participant Characteristics and Night Time Activities

Key Findings

- The odds of reporting going outside the house at night to buy water/food/gas/other (both camps) and for personal reasons (Camp Sinai) significantly increased from baseline to endline.

It is possible that this change in activity at night could be related to the different time of the year that the endline survey took place compared to the baseline. However, the potential connection between night time activities and the presence of handheld solar lights should be explored in future research. If there was indeed a connection between increased night time activities and solar lights, it would be important to explore whether women and girls are at increased risk for GBV as a result of being outside of the home more frequently at night.

5.2 Objective 1: Physical Environment Characteristics

Key Findings

- Both camps were perceived as unsafe places among females who participated in FGDs. This finding was supported by survey results showing that more than half of participants avoided certain areas of the camp due to safety concerns.
- Direct observation via safety audits captured major differences between the physical environments of the two camps. Camp Sinai had less access to electricity, street lighting in public places, and security forces compared to Camp Toto. Camp Sinai's shelters were mostly tents while shelters in Camp Toto were mostly made of wood. Camp Sinai was very crowded compared to Camp Toto.

The physical environments of both camps did not meet the needs of women and girls. For example, both camps lacked consistent and legal access to electricity. In addition, females perceived lack of protection from security forces (due to lack of forces in general and/or language barriers with MINUSTAH forces) and a lack of physical barriers such as gates at entrances and fences.

5.3 Objective 2: Utility of Handheld Solar Lights Characteristics

Key Findings

- The handheld solar lights, according to the FGDs and household survey data, were the most common source of indoor and outdoor lighting; a high proportion of participants reported daily use and would recommend it to friends and family.
- Indoor and outdoor use of candles and gas lamps decreased from baseline to endline.
- FGD participants verbalized several important benefits of the handheld solar lights:
    - No risk of house fire that an open flame would present;
    - They were able to see where they were going, as well as who is around them in the dark;
    - They were able to do things after dark such as sell goods, which contributed an economic benefit.
- FGD participants verbalized two potential dangers related to using the lights:
    - Outsiders could now see into tents as they passed by; and
    - Having a light meant that one could be a target for theft.

The lights were used frequently, particularly when going outside the home at night to do personal chores, obtain necessities, or practice their religion. In fact, the solar light was the most common source of lighting for women and girls. Females also reported being able to use the solar light as they wished, although we lack detailed information about the ways in which they may have negotiated use of the light. While we cannot attribute the reduction in use of candles and gas lamps directly to the presence of solar lights, it is a potential linkage that would be interesting to explore with future research. This finding is important for reasons beyond personal safety since the use of handheld solar lights are known to reduce use of candles and kerosene that can result in fires and exposure to toxins.

5.4 Objective 3: Durability of the Handheld Solar Light

Key Findings

- Data from monitoring visits and the endline survey indicate that the handheld solar lights were durable. More than three-quarters of endline survey participants reported no breakage of the light after 7 months.
- These data also indicate that most women and girls still possessed the light at endline. Households had an 88% probability of still owning the light after 7 months.
- Theft was the most common reason for not having the light.

The lights were not only popular among women and girls in both camps, but they held up over time and were retained to a high degree. Durability was an important finding since in humanitarian settings the allocation of scarce resources is always a major barrier and overall humanitarian assistance often goes down over time. Durability may have been different, however, if the evaluation had been implemented in the acute emergency phase.

In addition, effort was taken to ensure the lights were not stolen (e.g., keeping the lights locked away, charging in another location), which further supports the finding that the lights were a valued

commodity among camp residents. We lack more detailed information, however, on whether thefts occurred inside or outside of families which could inform the design of similar distributions in the future.

5.5 Objective 4: Sense of Safety

Key Findings

- The vast majority of women and girls reported fear of violence, and one-fifth of females who went outside the home at night reported feeling unprotected due to fear of sexual violence.
- Household survey data demonstrated that females in Camp Sinai had increased odds of feeling unprotected at endline compared to baseline; FGD participants supported this finding with females reporting deterioration of camp conditions over time.
- FGD participants reported feeling unsafe from crime as a result of fighting, harassment from men, and lack of infrastructure and protection inside the camps.
- The most commonly reported factors that would make females feel more protected from crime include greater presence of security forces, like the PNH, MINUSTAH, and neighborhood brigades in the area.

The most commonly reported reasons for feeling protected included the presence of security actors including MINUSTAH and PNH although more community patrols were requested. Women and girls also turned to their faith in God to feel safe. Other strategies for feeling protected included walking in groups or the existence of public lighting. However, most people who stayed inside did so because they did not feel safe. The most common safety concerns included hearing gun shots, physical violence, sexual violence, thugs, slashing of tents, and loud noise/cursing. The issue of criminality including slashing of tents and thugs was of primary concern.

Women and girls in Camp Sinai reported feeling less safe at endline compared to baseline. This result is supported by the finding from FGDs where females reported that the conditions in the camps had actually deteriorated since early on after the earthquake. Given these safety concerns, more attention should be placed on ensuring that quality programming and services exist for women and girls.

This study identified some key causes of feeling protected that can be used to reduce the factors that contribute to GBV in Haiti. This study showed the preference of certain strategies such as security patrols, going out as a group and turning to religion helped females to feel safe in Haiti. Only by identifying factors that contribute to and influence the type and extent of GBV can you develop appropriate and effective prevention strategies. As with all programs to combat GBV, prevention strategies are most effective when all sectors, including women and girls, are involved in the design phase and work together to reduce common risks that they experience [24].

5.6 Future Research

- More rigorous evaluations and studies (e.g., case-control studies) are needed to test the impact of handheld solar lights on women and girls' sense of safety, night time activities outside the home, and on the incidence of violence against females, in order to assess the appropriateness of these distributions as a stand-alone violence reduction intervention. Careful consideration, however, first needs to be given to the potential ethical implications of doing this type of research, particularly if handheld solar lights are withheld from a control group.
- Studies are needed to:
    - Determine the utility and durability of lights, including other types of solar and non-solar, non-battery powered lights, as well as general lighting provided at the community level in other settings and across various phases of emergencies.
    - Better understand the complex concepts of safety and protection in order to inform the development and validation of an index (rather than single item questions) that would more accurately measure sense of safety in emergency settings. It is likely that this type of index would need to be country/setting-specific, but could be adapted across emergency and post-emergency sites with formative qualitative work.
    - Evaluate a wider package of risk reduction activities versus handheld solar lights or other stand-alone interventions on the risk of violence against women and girls to better understand complementary or effective packages of interventions.
    - Contribute to knowledge about women and girls' access to and control over NFIs in the household. Humanitarian organizations should consider capturing this via post-distribution monitoring surveys in emergency contexts in order to determine women and girls' ability to keep and use NFIs once they have been distributed.

5.7 Study Limitations

There are a number of limitations related to this work, as is common with all evaluations; therefore, caution should be taken when interpreting the results of the evaluation.

- We had ethical concerns regarding the denial of lights to a control group, and therefore evaluated perceptions of safety before and after distribution of the solar lights. Because there was no control group, we are unable to draw causal conclusions about the impact of the lights on perceptions of safety or other indicators such as night time activities.
- This intervention did not take place in an emergency setting, but rather in a protracted setting over three years after the onset of a natural disaster. Results would most likely be different given the relative stability of the situation and the changing environment (e.g., more stable housing in one camp, establishment of electricity, established latrines, etc.). Thus, the findings of the evaluation are not generalizable to other camps in Haiti or in emergency settings.
- This intervention only tested one type of handheld solar light – one that was chosen based on its popularity with a test group of women and girls; therefore, we may have seen different results regarding use and acceptability based on the type of light used.
- We found that certain concepts such as feeling unprotected or unsafe were difficult to measure and translate into Haitian Creole. FGDs were used extensively to learn how best to understand these complex concepts. However, single item survey questions (e.g., "In the last week, did you

feel unprotected from crime at night?") were likely insufficient to fully capture the complexities of the concepts.

- Social desirability bias may have played a role in participant responses if participants thought that positive responses about solar light use and durability would increase the likelihood of continuation of the light program or result in additional distributions of handheld solar lights.
- The baseline questionnaire was translated and back-translated, however some survey questions needed to be modified in the middle of baseline data collection due to errors in response options and skip patterns.
- As a result of lessons learned from the baseline survey, the wording of safety questions from the baseline survey that were later used for the endline survey was changed. While these changes likely improved overall comprehension for the endline survey, they may have reduced the robustness of comparisons between baseline and endline data.
- Our GEE analysis only used the "matched" females so that more precise measurements of impact could be obtained from the same individual over time. This, however, reduced our sample size (from n=634 to n=553) for this particular analysis, resulting in a decrease in statistical power.
- Weighting was not used in the analysis of combined data from both camps due the use of different sampling strategies in the camps.

6. CONCLUSIONS

- Based on the household survey and FGDs, in these two IDP camps in Haiti, women and girls feel unsafe. Fears of physical and sexual violence appear widespread and risks to women and girls continue to persist at the endline.
- Based on the observations in camps, household surveys, and FGDs, the unfavourable physical environment of the camps, which include its crowded living conditions, inconsistent and illegal access to electricity, and lack of doors to latrines, is an important factor contributing to women and girls feeling unsafe.
- The evaluation indicates that women and girls liked and used the solar lights regularly; however, the lights do not address their most commonly held fears (e.g., thugs, physical violence, gunshots).
- The solar lights seem to have addressed a true need for women and girls: access to consistent portable lighting source. This, as well as durability and retention rates, could be a reason for investing in future distributions of this kind.

Protection in humanitarian response focuses on the safety and dignity of disaster-affected populations. This evaluation has shown that women and girls in Haiti accept and like solar lights and that the lights themselves are durable enough to be distributed and relied upon during the protracted emergency response cycle. Future studies should be expanded to other settings and should further evaluate the role of lighting in the prevention of GBV and how best to measure sense of safety among women and girls in emergency settings.

7. RECOMMENDATIONS

- The humanitarian community in Haiti should work toward improving the physical camp environment, such as improved lighting and shelters, in the IDP camps in order to affect the security and safety of women and girls.
- Safety audits should be conducted regularly to identify and describe the deteriorating physical conditions of the camps over time so that improvements can be managed more effectively and equitably.
- Based on recommendations made by women and girls, security presence and community patrols should be strengthened inside Sinai and Toto Camps.
- Handheld solar lights should be considered as one aspect of an overall package of services offered to women and girls.
- Given the utility and durability of these handheld solar lights, donors and humanitarian organizations should consider supporting the distribution of handheld solar lights for individual use to improve the overall quality of daily life for women and girls.
- Future studies should consider validating the findings of this research on the utility and durability of lights, including other types of solar and non-solar, non-battery powered lights, in other settings and across emergency management phases.

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9. APPENDICES

APPENDIX A: DIRECT OBSERVATION/SAFETY AUDIT DATA COLLECTION INSTRUMENT

OBSERVATIONAL SAFETY AUDIT

Team lead:	**Camp/location:**
Date:	**Time:**
Weather condition (indicate all that apply):	**____ Normal ____ Cloudy ____ Light rain ____ Heavy rain ____ Windy**

Community night lighting	**Visible?**		**Comments**
Electricity	Yes	No	
Solar Panels	Yes	No	
Other	Yes	No	
Household night lighting	Visible?		Comments
EDH (Electricite de Haiti)	Yes	No	
Candles	Yes	No	
Flashlights	Yes	No	
Phone flashlights	Yes	No	
Gas lamps	Yes	No	
Other	Yes	No	
Lighting at public places	Visible?		Comments
Water points	Yes	No	
Latrines	Yes	No	
Showers	Yes	No	
Churches	Yes	No	
Schools	Yes	No	
Community Building	Yes	No	
Other	Yes	No	
Walkways inside the camp	Yes	No	
Movement from/to the camp	Yes	No	
Crowded areas	Yes	No	
Community	Visible?		Comments

Church	Yes	No	
Market	Yes	No	
School	Yes	No	
Barriers or checkpoints	Yes	No	
Presence of actors	Visible?		Comments
MINUSTAH	Yes	No	
PNH (Police National de Haiti)	Yes	No	
Camp Committee	Yes	No	

Other Comments

APPENDIX B: FOCUS GROUP DISCUSSION INTERVIEW GUIDE IN ENGLISH

Date:	**Number of Participants in this group (total):**
Focus group discussion facilitator:	
Notetaker/s:	
Location of FGD: **Time FGD started:** **Time FGD concluded:** **Number of refusals:**	Age of FGD participants (ask each person their age)**:** ☐ 14-19 years (specify) _____ ☐ 25-45 years (specify) _____ Range and/or average for 25-45 group: _____

QUESTIONS

A. We would like to ask you a few questions about the daily activities of women and girls in this camp

1. In this community, what types of things do [*women/adolescent girls*] do during the daytime (for example, cleaning the house, or doing laundry, shopping, fun things, errands, earning money, going to church)?

2. In this community, what type of things do [*women/adolescent girls*] do when it is dark (for example, cleaning the house, or doing laundry, shopping, fun things, errands, earning money, going to church)?

(**Or):** is what you do after it is dark different than what you do in the daytime?)

3. Are there activities that [*women/adolescent girls*] do not do when it is dark? YES NO

3a. IF YES -- Please describe those activities:

3b. (**NOTE: difference question according to age group, see below)**

[**ASK the OLDER group**]: after the sun goes down, do you go out alone without any problems?

3b1. IF YES FOR OLDER WOMEN: Does going to church or work, doing social activities or finishing chores make it necessary for you to leave your house alone when it is dark? (If yes,

which ones)

3b.2 [ASK the YOUNGER girls]: Do you go out with friends when it is dark down without any problem?

3b.3. [ASK the YOUNGER girls]: Do you go out with adults without any problem when it is dark?

B. We would like to ask you a few questions about the safety of women and girls in this camp

1. What scares you after the sun goes down and it is dark outside?

2. What scares you during the daytime?

3. What makes you feel uneasy? What makes you feel afraid?

4. When you have been afraid, what did you do?

5. What can be done to make you less afraid?

6. Can you please describe any violence or bad things that happen to that [*women/adolescent girls*] in this camp. (Probes: this could be things like hitting, yelling that makes you feel afraid, shooting, men taking girls/women to places that they do not want to go)

MAPPING EXERCISE

We would like to better understand the camp and areas that seem dangerous to you. We have large pieces of paper and colored pens to use. We would like you to first draw a rough outline of the camp, marking some well-known areas (such as an area of toilets, a shop or market, church, etc.) so that we understand which areas of the camp you will be discussing. [DRAW]

We would like you to use a different colored pen to mark the areas that you think are dangerous or places in which you feel afraid. For example, are there places in this camp where you have heard that bad things happen to people or specific places where [*women/adolescent girls]* worry that someone might hurt them?

IF YES --- please describe and show the places to us on the map.

Please describe if feeling afraid in these places relates to the time of day or the things that happen in that place.

We would also like you to give us some idea of how dangerous they are. Please show us where you feel most afraid or in most danger [NOTE for facilitator: CIRCLE THE AREAS DESCRIBED AS MOST UNSAFE].

Let participants sketch the camp and draw locations that are dangerous and rank degrees of danger.

[Note takers: please make sure that you record in the notes areas of the map that the women describe, where they are in relation to commonly known areas of the camp, and what happens there, including time of day for the activities]

7. ASK ONLY OF older age group: Are there places you would advise adolescent girls to avoid after dark? YES NO

7a. IF YES Please describe those areas to us:

8. In this camp, do [women/adolescent girls] seem to be more exposed to crime or violence? YES NO

8a. Are there any types of that [*women/adolescent girls*] that need more protection, such as elderly women, girls that do not have parents and are living alone, or women/girls that have some type of disability, such as not walking well or not hearing?

8b. Why do you think these that [*women/adolescent girls*] are more vulnerable to crime or violence?

9. In the camp, what do that [*women/adolescent girls*] do to avoid bad things or harm? [***Or]:*** *are there strategies or things that women/adolescent girls do to not be hurt or afraid?]*

10. What does the community (the other people who live in the camp) do to protect that [*women/adolescent girls*] in this camp?

C. We would like to ask you questions about solar lamps. A few months ago, the IRC distributed some solar lamps in this camp.

1. How many of you currently have a handheld solar lamp given by IRC? [**NOTE: record the number, for example, 7]**

1a. NOTE: ASK THE NEXT QUESTION to the women/girls who DO NOT HAVE the solar lamp:

"For those of you who do not have the solar lamp, can you tell us what happened to the lamp? For example, we have heard from some people that their lights were stolen and some stopped working. (NO ONE WILL BE IN TROUBLE IF THE LAMP IS NOT IN YOUR HOUSE).

1b. For those who don't have the IRC solar lamp, what source or light would you carry ('flash')? [**NOTE: count and record the number]**

[SKIP QUESTION IF NO ONE HAS SOLAR LAMPS AND GO TO NUMBER 7]

2. In your homes, who uses the IRC solar lamp the most?

3. Please describe what you are doing when you use the solar lamp? [**NOTE: probe for time of day and places where solar lamps are used]**

4. Can you always use the IRC solar lamp when you want to use it? YES NO

4a. If NO, what happened to the IRC solar lamp that make you not able to use it when you wanted to. (**Or):** we've heard sometimes that a landlord or someone else will take the solar lamp and store it in a safe place so it's not stolen – has this ever happened to you?)

5. Does using the IRC solar lamp make you feel less afraid or more protected from people who might want to hurt you in some way? YES NO

6. Are there any places on the map where you were afraid to go before you had the IRC solar lamp, but now you would go there using the IRC solar lamp? YES NO

6a .**IF YES**: what areas can you now go to that you were worried about before?

7. For those of you without a flashlight or a solar lamp, what additional activities or things do you think that you could do if you had a flashlight or an IRC solar lamp?

8. Are there any reasons that [*women/adolescent girls*] would not want to use an IRC solar lamp at night or in a dark place? YES NO

8a. IF YES – please describe:

9. Does having the IRC solar lamp cause any problems for you or your family (for example: potential for theft or it causes people to look at you)? YES NO

10. Does anything about the IRC solar lamp make it hard to use? Inconvenient to use? (**Or):** for example, too heavy to carry, does not keep a charge on the batteries, makes someone a target for thieves)?

11. What do you think could be done in this camp to make it a camp with better security?

CONCLUDE THE DISCUSSION/ NOTETAKERS SHOULD LOOK AT THEIR NOTES

- **Thank participants for their time and their contributions**.
- Remind participants that the purpose of this discussion was to gain information to try to improve the living conditions for women and girls.
- Remind participants of their agreement to confidentiality.
- Remind participants not to share information or the names of other participants with others in the community.
- Ask participants if they have questions.
- If anyone wishes to speak in private, the evaluation team will be available after the meeting.
- You can also contact our field team supervisor, Reginald, at IRC, at the number **34066045**, if you have additional concerns or questions.

We have brought some cookies/drinks for you to thank you for your help with this. [NOTE to team: please pass out refreshments now]

APPENDIX C: BASELINE SURVEY QUESTIONNAIRE IN ENGLISH

Data collector			writer			Supervisor	1 / 2	Date	_____/08/2013	Give consent of household	Yes / no

State of house:	State of the chosen women:
1 Completed interview (date : _____) 2 Refused 3 Non-illegible woman 4 The data collector stopped the interview 5 Not home V1 V2 V3 6 Move 7 Other: _____	1 completed interview (date : _____) 2 Refused 3 Non-illegible woman 4 The data collector stopped the interview 5 Not home V1 V2 V3 6 Move 7 Other:_____

Section 1. Counting Houses

Read: We would like you to tell us about all the people living in this house.

1.1	**Can you tell us how many people living in this house?** **For this investigation people that are concerned are those who eat together and share the house's resources.**	

Read: We would like to know the age and sex of all people living in this house. If possible we would like to see someone who lives in this house and bring an ID card such as: an immunization card, the national ID card, the baptism ID card or any others that can help identify or see the age. I do not want to write their names.

Read: Now I would like to count how many people living in this house regarding their age and sex. Thanks for starting with the responsible of the house [Write the age and sex]

Read: Now call for me the people starting from the oldest to the youngest. [Write the sex and age of each person]
OBS: If you do not have the ID card of a person**, ASK FOR IT: Thank you because you are going to tell me how old was the person when celebrating its birthday the last time?**

Number of people in the household	1.2 Sex	1.3 Age in years **How old was this person when celebrating its birthday the last time?** Put '0' for Children with less than one year.	1.4 The Chosen Women (use (KISH's methods) put X	Give your consent	
				Adult	Girl
CdM 1.	M – F			Yes - N	Yes - N
2	M – F			Yes - N	Yes- N
3	M – F			Yes- N	Yes - N
4	M – F			Yes - N	Yes - N
5	M – F			Yes - N	Yes - N
6	M – F			Yes - N	Yes - N
7	M – F			Yes - N	Yes - N
8	M – F			Yes - N	Yes - N
9	M – F			Yes - N	Yes - N
10	M – F			Yes - N	Yes - N

Read: Now I will invite a girl or a woman to take part in this survey. [Use KISH's method]

Read: Now I will ask you questions about yourself and your activities? Remember that your answers will be kept secret for family and friends		
2	**How long have you lived in this camp**? If it's less than a year put ''0''	[___|___] Year [___|___] Month *(max : 3 years, 7months)* 88 NSP 99 PDR
3	**What grade level you reach?**	0 Not attending school. 1 Primary, level :_____ 2 High school, level :_____ 3 vocational school 4 Literacy 5 College – certificate 6 College – diploma 88 NSP 99 PDR
4	**Last week what did you do during the day?** Several answers are allowed	0 Tasks (childcare, cooking, etc.) 1 Water (From a boutique or a pump) 2 Go to Church 3 Go to the market 4 Work or small businesses to earn money 5 Leisure 6 Other (to be filled) :_____ 88 NSP 99 PDR
5.1	**Last week, during the night did you FEEL SAFE against crime? When talking about crime we mean specifically, thefts, physical and sexual violence; not the ones caused by rain and hurricane or natural disaster.**	0 Not feeling safe→ Q5.3 1 Feeling safe 88 NSP → Q5.3 99 PDR → Q5.3
5.2	**What makes you FEEL SO SAFE?** Several answers are allowed	0 Lighting in the camp 1 Presence of MINUSTAH 2 Presence of PNH 3 Presence of the Camp Committee 4 A security squad in the area 5 Others (specify) _____ _____ _____ 88 NSP 99 PDR

5.3	**<u>Last Week, during the night</u> were you NOT FEELING SAFE against crime? When talking about crime we mean specifically, thefts, physical and sexual violence; not the one caused by rain and hurricane or natural disaster?**	0 Not feeling safe → Q5.4 1 Feeling safe → Q6 88 NSP → Q6 99 PDR → Q6
5.4	**What made you FEEL UNSAFE?** Several answers are allowed	0 No lighting in the camp 1 Lots of thugs 2 No gate 3 Many werewolf 4 Others (specify) :_____ _____ _____ 88 NSP 99 PDR
6. Now, we would like to know where you ladies hold your activities at night?		
6.1	**<u>Last week, during the night</u> did you go out because you needed to buy for example water, food, gas or other stuff?**	0 No 1 Yes 88 NSP 99 PDR
6.2	**<u>Last week, during the night</u> did you go out for personal reason such going to the restroom?**	0 No 1 Yes 88 NSP 99 PDR
6.3	**<u>Last week, during the night</u> did you go out for work such as selling?**	0 No 1 Yes 88 NSP 99 PDR
6.4	**<u>Last week, during the night</u> did you go out for religious purposes such as going to church?**	0 No 1 Yes 88 NSP 99 PDR
6.5	**<u>Last week during the night,</u> did you go out for social reason such visiting a friend, attending an outdoor activity or other cultural activities?**	0 No 1 Yes 88 NSP 99 PDR
6.6	**<u>Last week,</u> did you go out for any other reasons during the night?**	0 No 1 Yes 88 NSP 99 PDR
6.7	**<u>Last week,</u> when you went out during the night DID YOU FEEL SAFE against crime? When talking about crime we mean specifically, thefts, physical and sexual violence; not the ones caused by rain and hurricane or natural disaster.**	0 Not feeling safe →Q6.9 1 Feeling safe 2 Woman do not go out →Q6.9 88 NSP→ Q6.9 99 PDR→Q6.9
6.8	**What makes you FEEL SO SAFE?** Several answers are allowed	0 Lightning in the camp 1 Presence of MINUSTAH 2 Presence of PNH 3 Presence of the Camp committee 4 Security squad in the zone 5 Others (specify) _____ _____ _____ 88 NSP 99 PDR

6.9	**<u>Last week</u> you went out during the night but were you NOT FEELING SAFE against crime? When talking about crime we mean specifically, thefts, physical and sexual violence; not the ones caused by rain and hurricane or natural disaster.**	0 Not feeling safe → Q6.10 1 Feeling safe → Q7.1 2 Woman do not go out → Q7.1 88 NSP → Q7.1 99 PDR → Q7.1
6.10	**What made you FEEL UNSAFE?** Several answers are allowed	0 No lightning in the camp 1 Lots of thugs 2 No gate 3 Many werewolf 4 Others (specify) : _____ _____ 88 NSP 99 PDR
7.1	**<u>Last week during the night</u> did you go out alone for stuff you needed home like: water, food, gas, candle or others?**	0 No Why: _____→ Q8 1 Yes→ Q7.2 88 NSP → Q8 99 PDR → Q8
7.2	**<u>Last week during the night</u> did you go out alone for other personal reason like: going to the rest- room, looking for medicine or others?**	0 No 1 Yes 88 NSP 99 PDR
7.3	**<u>Last week</u> did you go out alone for working activities like: selling or others during the night?**	0 No 1 Yes 88 NSP 99 PDR
7.4	**<u>Last week</u> did you go out for religious purposes like to church or others during the night?**	0 No 1 Yes 88 NSP 99 PDR
7.5	**<u>Last week during the night</u> did you go out alone for social reasons like visiting a friend, attending an outdoor activity or other cultural activity?**	0 No 1 Yes 88 NSP 99 PDR
7.6	**<u>Last week during the night</u> did you go out for any other reason?**	0 No 1 Yes 88 NSP 99 PDR
7.7	**<u>Last week at the time</u> you went out during the night, DID YOU FEEL SAFE against crime? When talking about crime we mean specifically, thefts, physical and sexual violence; not the ones caused by rain and hurricane or natural disaster.**	0 Not feeling safe →Q7.9 1 Feeling safe → Q7.8 2 Woman do not go out →Q7.9 88 NSP→Q7.9 99 PDR→Q7.9

7.8	**What makes you FEEL REALLY SAFE?** Several answers are allowed	0 Lightning in the camp 1 Presence of MINUSTAH 2 Presence of PNH 3 Presence of the Camp Committee 4 Security squad in the zone 5 Other (specify) _____ _____ _____ 88 NSP 99 PDR
7.9	**<u>Last week when you</u> went out alone during the night, did you feel UNSAFE AGAINST CRIME? When talking about crime we mean specifically, thefts, physical and sexual violence; not the ones caused by rain and hurricane or natural disaster.**	0 No, not feeling safe→ Q7.10 1 Yes, feeling safe →Q8 2 Woman do not go out → Q8 88 NSP → Q8 99 PDR → Q8
7.10	**What made you feel unsafe?** Several answers are allowed	0 No lightning in the Camp 1 A bunch of Thugs 2 No gate 3 Many werewolf 4 Other (specify) : _____ _____ _____ 88 NSP 99 PDR
8	**<u>Last week</u>, can you tell us where you would like to go but could not because of darkness? Why?**	WRITE THE NAME OF THE AREAS : _____ _____ _____ WHY :_____ _____ _____ 0 Nowhere 88 NSP 99 PDR
9	**<u>Did you see MINUSTAH</u> at the camp last week?**	0 No 1 Yes 88 NSP 99 PDR
10	**<u>Did you see PNH</u> at the camp last week?**	0 No 1 Yes 88 NSP 99 PDR
11	**<u>Did you see</u> a member of the camp committee last week?**	0 No 1 Yes 88 NSP 99 PDR
12-	**<u>Did you see</u> a member from the security squad in the zone last week?**	0 No 1 Yes 88 NSP 99 PDR

Now we would like to know how our light is used at night during the past week.					
13.1	**<u>Last week during the night,</u> did you use electricity or solar panel inside the house?**	0 No	1 Yes	88 NSP	99 PDR
13.2	**<u>Last week,</u> did you use electricity or solar panel outdoors during the night?**	0 No	1 Yes	88 NSP	99 PDR
13.3	**<u>Last week,</u> did you use candle inside the house during the night?**	0 No	1 Yes	88 NSP	99 PDR
13.4	**<u>Last week during the night</u>, did you use telephone flash outside the house?**	0 No	1 Yes	88 NSP	99 PDR
13.5	**<u>Last week</u>, did you use telephone flash inside the house during the night?**	0 No	1 Yes	88 NSP	99 PDR
13.6	**<u>Last week</u>, did you use telephone flash outside the house during the night?**	0 No	1 Yes	88 NSP	99 PDR
13.7	**<u>Last week,</u> did you use the lamp inside the house during the night?**	0 No	1 Yes	88 NSP	99 PDR
13.8	**<u>Last week</u>, did you use the lamp outside the house during the night?**	0 No	1 Yes	88 NSP	99 PDR
13.9	**<u>Last week</u>, did you use the flashlight inside the house during the night?**	0 No	1 Yes	88 NSP	99 PDR
13.10	**<u>Last week during the night</u>, did you use the flashlight outdoors?**	0 No	1 Yes	88 NSP	99 PDR
13.11	**<u>Last week during the night</u>, did you use another type of lightning inside the house?**	0 No 1 Yes (be filled) :_____ 88 NSP 99 PDR			
13.12	**<u>Last week during the night</u>, did you use another type of lightning outside the house?**	0 No 1 Yes (be filled) :_____ 88 NSP 99 PDR			
13.13	**Are these flashlight work?** Write the amount.	quantity: _____			
13.14	**How many of these flashlights are not good?** Write the amount	quantity : _____			
Thanks so much for your time					

OBS :

APPENDIX D: MONITORING VISIT QUESTIONNAIRE IN ENGLISH

IRC/CDC Monitor Data Collection Form ☐ 1 ☐ 2		Camp:	
Section/block:	**1 / 2 / 3 / 4 / 5**	**Household No:**	

Household visit date	Agree	Absent	Moved	Refused	Never receive
1st visit: ____/____/_____					
2nd visit:____/____/_____					
3rd visit: ____/____/_____					

1.Respondent	2. Solar Lights 2.1 Did you receive a lamp from IRC? Yes or No 2.12 Did you get a replacement lamp at the beginning? Yes or No ow may I please see the handheld solar light(s) and panel(s) you received from IRC?"	3. Charged light Turn on light. 3.1 Is it charged? (indicate below)
1.1 M / F 1.2 Age:_____	**LIGHT 1: 2.2 Was the solar light shown (Solar light plus the solar panel)?** ☐ 1.Light and solar panel →**Go to 3** ☐ 2.Light only → Q 2.3 ☐ 0.No → Q 2.3 **2.3** What happened to the light and panel? **(tick all that apply)** a.☐ Light +panel stolen b.☐Only light stolen c.☐Only panel stolen d.☐ Light + panel lost e.☐Only light lost f.☐Only panel lost g.☐ Light + panel broken h.☐Only light is broken i.☐Only Panel broken j.☐ Panel cable is broken k. ☐ Light is being borrowed l.☐ Other (explain)_____ _____ If were **NOT ABLE** to see the solar light (s) the interview is over. Thank the person for their time.	**LIGHT 1:** 1. ☐Charged 2. ☐Currently on charge 0. ☐ Not charged –> Ask **Why?** a.☐ No time to charge b.☐ Forgot to charge c.☐ Broken solar panel d ☐ Other-**please explain below** ---------- ---------- ---------- ---------- ---------- ---- **Now go to Household Census Section (4)**

Household Members **4.1** Now I would like to ask you about <u>all the males and females</u> that stay in your household. By household we mean people who <u>stayed here</u> <u>during the last week</u>; people who sleep here, eat meals together and share resources together.			**Solar Light Use** Can you please think <u>about the last week?</u> **5.1 Please tell me if anyone from the household used the solar light during the last week.** <u>(*Complete each individual before going to the next person)</u>	**Solar Light** **5.2 Was the light used indoors, outdoors or both?**	**Activity for Solar light** **5.3 Please tell me what type of activity(ties) this person used the lamp for, during the last week?**
<u>Member No.</u>	**<u>Sex circle</u>**	**<u>Age yrs</u>**	**<u>Use</u> <u>Circle response</u>**	**<u>Location</u> <u>Check only one response</u> ☒**	**<u>Indicate Activity (ties)</u> <u>Check all responses that apply</u> ☒ <u>and write in other responses - be specific</u>**
1	M / F		Yes / No / DK	**1.☐Indoors 2.☐Outdoors** **3.☐Both indoors and outdoors** **9.☐DK**	a.☐To read or study b.☐Light to walk outside c.☐For cooking d.☐ Light the room in general e.☐Light to go to toilet f.☐Charge the phone **g**.☐Other: Please explain: _____
2	M / F		Yes / No / DK	**1.☐Indoors 2.☐Outdoors** **3.☐Both indoors and outdoors** **9.☐DK**	a.☐To read or study b.☐Light to walk outside c.☐For cooking d.☐ Light the room in general e.☐Light to go to toilet f.☐Charge the phone **g**.☐Other: Please explain: _____
3	M / F		Yes / No / DK	**1.☐Indoors 2.☐Outdoors** **3.☐Both indoors and outdoors** **9.☐DK**	a.☐To read or study b.☐Light to walk outside c.☐For cooking d.☐ Light the room in general e.☐Light to go to toilet f.☐Charge the phone **g**.☐Other: Please explain: _____
4	M / F		Yes / No / DK	**1.☐Indoors 2.☐Outdoors** **3.☐Both indoors and outdoors** **9.☐DK**	a.☐To read or study b.☐Light to walk outside c.☐For cooking d.☐ Light the room in general e.☐Light to go to toilet f.☐Charge the phone **g**.☐Other: Please explain: _____
5	M / F		Yes / No / DK	**1.☐Indoors 2.☐Outdoors** **3.☐Both indoors and outdoors** **9.☐DK**	a.☐To read or study b.☐Light to walk outside c.☐For cooking d.☐ Light the room in general e.☐Light to go to toilet f.☐Charge the phone **g**.☐Other: Please explain: _____
6	M / F		Yes / No / DK	**1.☐Indoors 2.☐Outdoors** **3.☐Both indoors and outdoors** **9.☐DK**	a.☐To read or study b.☐Light to walk outside c.☐For cooking d.☐ Light the room in general e.☐Light to go to toilet

					f.☐Charge the phone **g**.☐Other: Please explain: _____
7	M / F		Yes / No / DK	**1.☐Indoors 2.☐Outdoors** **3.☐Both indoors and outdoors** **9.☐DK**	a.☐To read or study b.☐Light to walk outside c.☐For cooking d.☐ Light the room in general e.☐Light to go to toilet f.☐Charge the phone **g**.☐Other: Please explain: _____
8	M / F		Yes / No / DK	**1.☐Indoors 2.☐Outdoors** **3.☐Both indoors and outdoors** **9.☐DK**	a.☐To read or study b.☐Light to walk outside c.☐For cooking d.☐ Light the room in general e.☐Light to go to toilet f.☐Charge the phone **g**.☐Other: Please explain: _____
9	M / F		Yes / No / DK	**1.☐Indoors 2.☐Outdoors** **3.☐Both indoors and outdoors** **9.☐DK**	a.☐To read or study b.☐Light to walk outside c.☐For cooking d.☐ Light the room in general e.☐Light to go to toilet f.☐Charge the phone **g**.☐Other: Please explain: _____
10	M / F		Yes / No / DK	**1.☐Indoors 2.☐Outdoors** **3.☐Both indoors and outdoors** **9.☐DK**	a.☐To read or study b.☐Light to walk outside c.☐For cooking d.☐ Light the room in general e.☐Light to go to toilet f.☐Charge the phone **g**.☐Other: Please explain: _____
11	M / F		Yes / No / DK	**1.☐Indoors 2.☐Outdoors** **3.☐Both indoors and outdoors** **9.☐DK**	a.☐To read or study b.☐Light to walk outside c.☐For cooking d.☐ Light the room in general e.☐Light to go to toilet f.☐Charge the phone **g**.☐Other: Please explain: _____
12	M / F		Yes / No / DK	**1.☐Indoors 2.☐Outdoors** **3.☐Both indoors and outdoors** **9.☐DK**	a.☐To read or study b.☐Light to walk outside c.☐For cooking d.☐ Light the room in general e.☐Light to go to toilet f.☐Charge the phone **g**.☐Other: Please explain: _____
13	M / F		Yes / No / DK	**1.☐Indoors 2.☐Outdoors** **3.☐Both indoors and outdoors** **9.☐DK**	a.☐To read or study b.☐Light to walk outside c.☐For cooking d.☐ Light the room in general e.☐Light to go to toilet f.☐Charge the phone **g**.☐Other: Please explain: _____
14	M / F		Yes / No / DK	**1.☐Indoors 2.☐Outdoors**	a.☐To read or study b.☐Light to walk

				3.☐Both indoors and outdoors **9.☐DK**	outside c.☐For cooking d.☐ Light the room in general e.☐Light to go to toilet f.☐Charge the phone **g**.☐Other: Please explain: _____
15	M / F		Yes / No / DK	**1.☐Indoors 2.☐Outdoors** **3.☐Both indoors and outdoors** **9.☐DK**	a.☐To read or study b.☐Light to walk outside c.☐For cooking d.☐ Light the room in general e.☐Light to go to toilet f.☐Charge the phone **g**.☐Other: Please explain: _____

APPENDIX E: ENDLINE SURVEY QUESTIONNAIRE IN ENGLISH

Camp	1 Sinai - 2 Toto	Section	1– 2– 3– 4– 5	HH #					Interview			
Data collector			writer			Supervisor	1 / 2 / 3 / 4	Date	___/___/2014	Give consent of household	Yes / No	

State of the chosen women:

1 Completed interview (date: _____)
2 Refused
3 Non-illegible woman
4 The data collector stopped the interview
5 Not home V1 V2 V3
6 Move
7 Other:_____

Section 1. Counting Houses

Read: We would like you to tell us about all the people living in this house.

1.1	**Can you tell us how many people living in this house?** **Read: For this investigation people that are concerned are those who eat together and share the house's resources.**	

Read: In September, we interviewed a ____ year old female – is she available to interview now? Yes – No
What is her age now? ____

Read: Now I will tell you about the study. READ CONSENT NOW. Does she consent to the interview? Yes – No
If yes, → Q2

If NO, Read: When is a good day and time for us to return to interview her? _____

If not available x3, Read: I will invite another girl or a woman to take part in this survey. [Use KISH's method]

Read: We would like to know the age and sex of all people living in this house. If possible we would like to see someone who lives in this house and bring an ID card such as: an immunization card, the national ID card, the baptism ID card or any others that can help identify or see the age. I do not want to write their names.

Read: Now I would like to count how many people living in this house regarding their age and sex. Now tell me the people starting from the oldest to the youngest. [Write the sex and age of each person] OBS: If you do not have the ID card of a person**, ASK FOR IT. Please tell me how old the person was when he/she celebrated the last birthday?**

Number of people in the household	1.2 Sex	1.3 Age in years How old was this person when celebrating its birthday the last time? Put '0' for Children with less than one year.	1.4 The Chosen Women (use KISH's methods) put X	1.5 Give your consent	
				Adult	Girl
1	M – F			Yes - No	Yes - No
2	M – F			Yes - No	Yes - No
3	M – F			Yes - No	Yes - No
4	M – F			Yes - No	Yes - No
5	M – F			Yes - No	Yes - No
6	M – F			Yes - No	Yes - No
7	M – F			Yes - No	Yes - No
8	M – F			Yes - No	Yes - No
9	M – F			Yes - No	Yes - No
10	M – F			Yes - No	Yes - No

Read: Now I will ask you questions about yourself and your activities. Remember that your answers will be kept secret for family and friends		
2	**How long have you lived in this camp**? If it's less than a year put ''0''	[___|___] Year [___|___] Month *(max: 4 years, 4 months)* 88 No response 99 I do not know
3	**What grade level have you reached? (last completed grade)**	0 Not attending school 1 Primary level:_____ 2 High school level:_____ 3 Vocational school 4 Literacy 5 College – certificate 6 College – diploma 88 No response 99 I do not know
4	**In the last week what activities did you do during the day?** Several answers are allowed	0 Domestic Tasks (childcare, cooking, etc.) 1 Fetching Water (from a boutique or a pump) 2 Go to Church 3 Go to the market 4 Work or small businesses to earn money 5 Talk with friends by texting 6 Talk with friends in person 7 Attend school or do homework/study 8 Watch TV 9 Sleep or do nothing 10 Other (specify):_____ 88 No response 99 I do not know
5.1	**In the last week during the night, did you feel protected from crime (including when you were inside or outside of the house, alone or with other people)?** **When talking about crime we mean specifically, thefts, physical and sexual violence; not danger caused by rain and hurricane or natural disaster.**	0 No, I did **NOT** feel protected → Q5.3 1 Yes, I did feel protected 88 No response → Q5.3 99 I do not know → Q5.3

5.2	**Why did you feel protected from crime during the night (including when you were inside or outside of the house, alone or with other people)?** Several answers are allowed	0 Lighting in the camp 1 Presence of MINUSTAH 2 Presence of PNH 3 Presence of a Camp Committee 4 A brigade (community members patrolling) in the area 5 A gate at entrances 6 An enclosure surrounding the camp (e.g., brick wall or fence) 7 Walking with others in a group 8 Presence of women's services/groups (e.g., church groups for women) 9 Using the IRC handheld Solar lamp 10 God is with me 11 Other (specify): _____ 88 No response 99 I do not know
5.3	**In the last week during the night, did you <u>NOT</u> feel protected from crime (including when you were inside or outside of the house, alone or with other people)?** **When talking about crime we mean specifically thefts, physical and sexual violence; not danger caused by rain and hurricane or natural disaster**	0 No, I did feel protected → Q6.1 1 Yes, I did **<u>NOT</u>** feel protected → Q5.4 88 No Response → Q6.1 99 I do not know → Q6.1

5.4	**Why did you <u>NOT</u> feel protected from crime during the night?** Several answers are allowed	0 Not enough lighting in the camp 1 Lots of thugs 2 No gate at entrances of the camp (barye) 3 Many werewolves (lougarou or dyab)/bakas/zombies 4 Hearing gun shots 5 Rock/bottle throwing 6 Physical violence (e.g., fighting between men on men, men on women, and women on women) 7 Sexual violence (e.g., rape) 8 Harassment 9 Loud noise/cursing 10 Ability of people to slash tents and enter the tents 11 Other (specify): _____ 88 No response 99 I do not know
Read: Now, we would like to know about your activities at night that you do either alone or with other people		
6.1	**In the last week during the night, did you go out of your house (alone or with other people)?**	0 No, I did **<u>NOT</u>** go out at night → Q6.2 1 Yes, I did go out at night → Q6.3 88 No response → Q6.3 99 I don't know → Q6.3
6.2	**Did you stay at home because you did <u>NOT</u> feel protected from crime?** **When talking about crime we mean specifically, thefts, physical and sexual violence; not danger caused by rain and hurricane or natural disaster**	0 No, I stayed at home for another reason → Q8.1 1 Yes, I stayed at home because I did not feel protected → Q8.1 2 I stayed home because I was instructed to stay home from parent/guardian → Q8.1 3 I stayed home because I was instructed to stay home from parent/guardian **<u>AND</u>** because I did not feel protected → Q8.1 4 I stayed home because I was instructed to stay home by my husband → Q8 5 I stayed home because I was instructed to stay home by my husband **<u>AND</u>** because I did not feel protected → Q8.1 88 No response → Q8.1 99 I do not know → Q8.1

6.3	**In the last week during the night, did you go out (alone or with other people) for the following reasons:**	
	6.3a **To get stuff you needed for home like water, food, gas, candle or others?**	0 No 1 Yes 88 No response 99 I do not know
	6.3b **For personal reason like going to the latrine/toilet, looking for medicine or other personal reasons?**	0 No 1 Yes 88 No response 99 I do not know
	6.3c **For work activities like selling things or other work activities?**	0 No 1 Yes 88 No response 99 I do not know
	6.3d **For religious purposes like to church or other religious purposes?**	0 No 1 Yes 88 No response 99 I do not know
	6.3e **For social reasons like visiting a friend, attending an outdoor activity or other cultural activity?**	0 No 1 Yes 88 No response 99 I do not know
	6.3f **For any other reason?**	0 No 1 Yes (specify) _____ 88 No response 99 I do not know
6.4	**In the last week during the night <u>when you went out</u> (alone or with other people), did you feel protected against crime?** **When talking about crime we mean specifically, thefts, physical and sexual violence; not danger caused by rain and hurricane or natural disaster.**	0 No, I did **<u>NOT</u>** feel protected → Q6.6 1 Yes, I did feel protected → Q6.5 88 No response → Q6.6 99 I do not know → Q6.6

6.5	**Why did you feel protected against crime <u>when you went out</u> during the night (alone or with other people)?** Several answers are allowed	0 Lighting in the camp 1 Presence of MINUSTAH 2 Presence of PNH 3 Presence of a Camp Committee 4 A brigade (community members patrolling) in the area 5 A gate at entrances of the camp (barye) 6 An enclosure surrounding the camp (e.g., brick wall or fence) 7 Walking with others in a group 8 Presence of women's services/groups (e.g., church groups for women) 9 Using the IRC handheld solar lamp 10 God is with me 11 Others (specify): _____ 88 No response 99 I do not know
6.6	**In the last week during the night <u>when you went out</u> (alone or with other people), did you <u>NOT</u> feel protected from crime?** **When talking about crime we mean specifically, thefts, physical and sexual violence; not danger caused by rain and hurricane or natural disaster.**	0 No, I did feel protected → Q6.8 1 Yes, I did **<u>NOT</u>** feel protected → Q6.7 88 No response → Q6.8 99 I do not know → Q6.8
6.7	**Why did you <u>NOT</u> feel protected from crime when you went out during the night (alone or with other people)?** Several answers are allowed	0 Not enough lighting in the camp 1 Lots of thugs 2 No gate at entrances of the camp (barye) 3 Many werewolves (lougarou or dyab)/bakas/zombies 4 Hearing gun shots 5 Rock/bottle throwing 6 Physical violence (e.g., fighting between men on men, men on women, and women on women) 7 Sexual violence (e.g., rape) 8 Harassment 9 Loud noise/cursing 10 Ability of people to slash tents and enter the tents 11 Other (specify): _____ 88 No response 99 I do not know

6.8	**<u>In the last week</u> when you went out during the night (alone or with other people), did you ever use the IRC handheld solar lamp?**	0 No, I did **<u>NOT</u>** use it in the last week 1 Yes, I did use it in the last week 2 I did **<u>NOT</u>** use it because the lamp was not available 3 They didn't give me a lamp → 7.1 88 No response 99 I do not know
6.9	**<u>The last time</u> that you went out during the night (alone or with other people), did you use the IRC handheld solar lamp?**	0 No, I did **<u>NOT</u>** use it the last time I went out at night 1 Yes, I did use it the last time I went out at night 2 I did **<u>NOT</u>** use it because the lamp was not available 88 No response 99 I do not know

Read: Now, we would like to know about your activities at night when you go out ALONE		
7.1	**In the last week during the night, did you <u>go out ALONE</u>?**	0 No, I did **<u>NOT</u>** go out at night alone → Q7.2 1 Yes, I did go out at night alone → Q7.3 88 No response → Q7.3 99 I do not know → Q7.3
7.2	**Did you <u>NOT</u> go out ALONE at night because you did <u>NOT</u> feel protected from crime?** **When talking about crime we mean specifically, thefts, physical and sexual violence; not danger caused by rain and hurricane or natural disaster**	0 No, I did not go out alone because I did not feel protected. It was for another reason → Q8.1 1 Yes, I did not go out alone because I did not feel protected → Q8.1 2 I did not go out alone because I was instructed not to from parent/guardian → Q8.1 3 I did not go out alone because I was instructed not to from parent/guardian **<u>AND</u>** because I did not feel protected → Q8.1 4 I did not go out alone because I was instructed not to by my husband → Q8.1 5 I did not go out alone because I was instructed not to by my husband **<u>AND</u>** because I did not feel protected → Q8.1 88 No response → Q8.1 99 I do not know → Q8.1
7.3	**In the last week during the night did you <u>go out ALONE</u> for the following reasons:**	

	7.3a **To get stuff you needed for home like water, food, gas, candle or others?**	0 No 1 Yes 88 No response 99 I do not know
	7.3b **For personal reason like going to the latrine/toilet, looking for medicine or other personal reasons?**	0 No 1 Yes 88 No response 99 I do not know
	7.3c **For work activities like selling things or other work activities?**	0 No 1 Yes 88 No response 99 I do not know
	7.3d **For religious purposes like to church or other religious purposes?**	0 No 1 Yes 88 No response 99 I do not know
	7.3e **For social reasons like visiting a friend, attending an outdoor activity or other cultural activity?**	0 No 1 Yes 88 No response 99 I do not know
	7.3f **For any other reason?**	0 No 1 Yes (specify) _____ 88 No response 99 I do not know
7.4	**In the last week during the night when <u>you went out ALONE</u>, did you feel protected against crime?** **When talking about crime we mean specifically, thefts, physical and sexual violence; not the ones caused by rain and hurricane or natural disaster.**	0 No, I did **<u>NOT</u>** feel protected → Q7.6 1 Yes, I did feel protected → Q7.5 88 No response → Q7.6 99 I do not know → Q7.6

7.5	**Why did you feel protected from crime when you went out during the night ALONE?** Several answers are allowed	0 Lighting in the camp 1 Presence of MINUSTAH 2 Presence of PNH 3 Presence of a Camp Committee 4 A brigade (community members patrolling) 5 A gate at entrances of camp (barye) 6 An enclosure surrounding the camp (e.g., brick wall or fence) 7 Walking with others in a group 8 Presence of women's services/groups (e.g., church groups for women) 9 Using the IRC handheld solar lamp 10 God is with me 11 Others (specify): _____ 88 No response 99 I do not know
7.6	**In the last week during the night when you went out ALONE, did you <u>NOT</u> feel protected from crime?** **When talking about crime we mean specifically, thefts, physical and sexual violence; not danger caused by rain and hurricane or natural disaster.**	0 No, I did feel protected → Q7.8 1 Yes, I did **<u>NOT</u>** feel protected → Q7.7 88 No response → Q7.8 99 I do not know → Q7.8
7.7	**Why did you <u>NOT</u> feel protected when you went out during the night ALONE?** Several answers are allowed	0 Not enough lighting in the camp 1 Lots of thugs 2 No gate at entrances of the camp (barye) 3 Many werewolves (lougarou or dyab)/bakas/zombies 4 Hearing gun shots 5 Rock/bottle throwing 6 Physical violence (e.g., fighting between men on men, men on women, and women on women) 7 Sexual violence (e.g., rape) 8 Harassment 9 Loud noise/cursing 10 Ability of people to slash tents and enter the tents 11 Other (specify): _____ 88 No response 99 I do not know

7.8	**<u>In the last week</u> when you went out during the night ALONE, did you ever use the handheld solar lamp?**	0 No, I did **<u>NOT</u>** use it in the last week 1 Yes, I did use it in the last week 2 I did **<u>NOT</u>** use it because the lamp was not available 3 They didn't give me a lamp → 8.1 88 No response 99 I do not know
7.9	**<u>The last time</u> that you went out during the night ALONE, did you use the handheld solar lamp?**	0 No, I did **<u>NOT</u>** use it the last time I went out alone 1 Yes, I did use it the last time I went out alone 2 I did **<u>NOT</u>** use it because the lamp was not available 88 No response 99 I do not know

Read: Now we would like to know about security in your camp			
8.1	**In the last week, can you tell us where you would have gone but could not go because you did <u>NOT</u> feel protected?** Several answers are allowed	**<u>Camp Sinai</u>** 0 I can go anywhere 1 Roads surrounding the camp 2 Road coming from airport 3 Pathway to "blok ba" 4 Toilet area 5 Entrance area to Section B 6 Site of former school in Section C 7 Water locations 8 Bottom of hill in Section D 9 Other (specify): _____ _____ _____ 88 No response 99 I do not know	**<u>Camp Toto</u>** 0 I can go anywhere 1 Roads surrounding the camp 2 Site of bus 3 Ravine 4 Carradeux Road 5 Path between Plateaux #1 and #7 6 Behind toilets/latrines 7 Path to Camp Canaan 8 On the hills of Plateaux #7 9 Other (specify): _____ _____ _____ 88 No response 99 I do not know

8.2	**What would make you feel <u>MORE</u> protected from crime at night in your camp?** **Several answers are allowed**	0 Nothing would make me feel safer 1 Better lightning in the camp 2 More presence of MINUSTAH 3 More presence of PNH 4 More presence of the Camp committee 5 A brigade/more presence of a brigade (Community members patrolling) in the area 6 A gate at entrances of camp (barye) 7 An enclosure surrounding the camp (e.g., brick wall or fence) 8 Walking with others in a group 9 More presence of women's services/groups (e.g., church groups for women) 10 More handheld solar lights 11 More LARGE solar panels on poles 12 Living in a shelter rather than a tent 13 Other (specify): _____ 88 No response 99 I do not know
8.3	**In the last week, did you see the following in the camp:**	
	8.3a **MINUSTAH**	0 No 1 Yes 88 No response 99 I do not know
	8.3b **PNH**	0 No 1 Yes 88 No response 99 I do not know
	8.3c **A MEMBER OF A CAMP COMMITTEE**	0 No 1 Yes 88 No response 99 I do not know
	8.3d **A MEMBER FROM A BRIGADE (community members patrolling)**	0 No 1 Yes 88 No response 99 I do not know

8.3e	**A MEMBER OF AN NGO**	0 No 1 Yes 88 No response 99 I do not know
8.3f	**A MEMBER OF WOMEN'S SERVICES/GROUPS** (e.g., church groups for women)	0 No 1 Yes 88 No response 99 I do not know

Read: Now we would like to know about your use of lighting at night during the last week.

9.1 **In the last week during the night, did you use the following sources of lighting INSIDE the house:**

9.1a	**PUBLIC ELECTRICITY?**	0 No 1 Yes 88 No response 99 I do not know
9.1b	**THE SOLAR LAMP from IRC?**	0 No 1 Yes 2 They didn't give me a lamp 88 No response 99 I do not know
9.1c	**A CANDLE?**	0 No 1 Yes 88 No response 99 I do not know
9.1d	**TELEPHONE FLASH?**	0 No 1 Yes 88 No response 99 I do not know
9.1e	**TRADITIONAL GAS LAMP?**	0 No 1 Yes 88 No response 99 I do not know
9.1f	**A FLASHLIGHT (not the IRC solar light)?**	0 No 1 Yes 88 No response 99 I do not know

	9.1g **ANOTHER TYPE OF LIGHTING?**	0 No 1 Yes (Explain):_____ 88 No response 99 I do not know
9.2	**In the last week during the night, did you use the following sources of lighting <u>OUTSIDE</u> of your house?**	
	9.2a **PUBLIC ELECTRICITY?**	0 No 1 Yes 88 No response 99 I do not know
	9.2b **THE SOLAR LAMP from IRC?**	0 No 1 Yes 2 They didn't give me a lamp 88 No response 99 I do not know
	9.2c **CANDLE?**	0 No 1 Yes 88 No response 99 I do not know
	9.2d **TELEPHONE FLASH?**	0 No 1 Yes 88 No response 99 I do not know
	9.2e **TRADITIONAL GAS LAMP?**	0 No 1 Yes 88 No response 99 I do not know
	9.2f **FLASHLIGHT (not including the IRC light)?**	0 No 1 Yes 88 No response 99 I do not know
	9.2g **The light from LARGE SOLAR PANELS ON POLES? (Toto only)**	0 No 1 Yes 2 Not applicable (Camp Sinai) 88 No response 99 I do not know

	9.2h **ANOTHER TYPE OF LIGHTING?**	0 No 1 Yes (Explain):_____ 88 No response 99 I do not know
9.3	**How many flashlights (not including IRC lamp) do you have in your house that work?** Write the amount	Quantity: _____
9.4	**How many flashlights (not including IRC lamp) do you have in your house that do not work?** Write the amount	Quantity : _____

Read: **Now I will ask about the solar light and panel that you received from IRC**		
10.1	**How often do/did you use the solar lamp?** **READ THE RESPONSES**	0 Never 1 Once a month 2 Once a week 3 Once a day 4 More than one time per day 88 No response 99 I do not know
10.2	**Do you still have the IRC solar lamp?**	0 No → Q10.6 1 Yes 88 No response 99 I do not know
Read: **Now may I please see the solar light and panel?**		
10.3	**Was the IRC solar lamp shown (solar light and panel)?** **OBSERVATION**	0 No → Q10.5 1 Yes, light and solar panel shown 2 Light only 3 Panel only → Q10.5
10.4	**Turn on light. Is the light charged?** **OBSERVATION**	0 Charged → Q10.8 1 Currently on charger → Q10.8 2 Not charged - no time to charge → Q10.8 3 Not charged - forgot to charge → Q10.8 4 Not charged - broken solar panel → Q10.8 5 Not charged - Other (Specify):_____ _____ → Q10.8
10.5	**Where is the lamp now?**	0 Locked away in the house → Q10.8 1 Used away from the house → Q10.8 2 Charged away from the house → Q10.8 3 Kept away from the house for safety → Q10.8 4 Borrowed → Q10.8 5 Being fixed → Q10.8

		88 No response → Q10.8 99 I do not know → Q10.8
10.6	**What happened to the IRC solar lamp?**	0 Light and panel stolen 1 Only light stolen 2 Only panel stolen 3 Light and panel lost 4 Only light lost 5 Only panel lost 6 Light and panel broken 7 Only light broken 8 Only panel broken 9 Panel cable is broken 10 Gave light as a gift 11 Sold light 12 I did not get the lamp → **END INTERVIEW** 13 Other (specify) :_____ 88 No response 99 I do not know
10.7	**How many months did you have the lamp from IRC before it was stolen/lost/broken/gifted/sold?**	____ months ____ weeks ____ days → **If 0 END INTERVIEW** 88 No response 99 I do not know
10.8	**How much time does/did it take to charge the solar lamp?**	____ Hours ____ Minutes 88 No response 99 I do not know
10.9	**Does/did it take too much time to charge?**	0 No, it does/did **NOT** take too much time 1 Yes, it does take too much time 88 No response 99 I do not know
10.10	**Did your lamp/panel/cable ever break?**	0 No, it did **NOT** break → Q10.14 1 Only the lamp broke 2 Only the panel broke 3 Only the cable broke 4 Lamp and panel broke 5 Lamp and cable broke 6 Panel and cable broke 88 No response 99 I do not know
10.11	**Did you fix the lamp/panel/cable?**	0 No, I did **NOT** fix it and it does **NOT** work → Q10.14 1 Yes, I did fix it → Q10.12

		2 I did **NOT** fix it but it still works → Q10.14 3 No, IRC gave me a new lamp → Q10.14 88 No response → Q10.14 99 I do not know → Q10.14
10.12	**How much time did it take to fix the lamp?**	____ Days ____ Hours ____ Minutes 88 No response 99 I do not know
10.13	**How much did you pay to have the lamp fixed?**	0 I did not have to pay money to fix it _____ (amount) 88 No response 99 I do not know
10.14	**Would you recommend the solar lamp to friends and family?**	0 No, I would NOT recommend it If no, why? (specify): _____ _____ 1 Yes, I would recommend it 88 No response 99 I do not know
10.15	**Is the solar lamp worse, better, or the same as other lighting?**	0 The solar lamp is worse Why? (specify): _____ _____ 1 The solar lamp is better 2 The solar lamp is the same 88 No response 99 I do not know
FINISH THE INTERVIEW and Read: Thanks so much for your time		

APPENDIX F: CONSENT FORMS

Focus Group Discussion Guide

INTRODUCTION AND INFORMED CONSENT:

My name is _____ and I work at the International Rescue Committee (commonly called IRC). We are here to learn from you how the agencies in the camp can improve living conditions for women. The information discussed will be given to the agencies so that they can plan their programs. I will lead today's discussion.

I would like to now introduce my team. Our two notes takers are from IRC also and their names are: . In addition, we have two guests from the Ministry of Health in the US, Drs. Williams and Archer. They are here to help us with this project. Dr. Williams is sorry but she does not speak Creole so she also has someone translating for her, her name is _____.

[Would anyone like to open the discussion with a prayer?]

Your participation is voluntary. No one has to answer any questions if she does not wish. Participants can leave the discussion at any time. No one is required to share personal experiences if she does not wish. Individual names should not be shared. Please be respectful when others speak. The leader might stop the discussion, but only to ensure that everyone has an opportunity to speak and no one person dominates the discussion. I may also ask that the discussion slow down so that the note takers have time to write the important things that you say.

We will ask if each of you agree to be a member of this discussion. Now I would like to ask for permission to write (record) everyone's responses . We are writing down what you say so that the valuable information that you share with us is not missed. We will keep all discussion confidential. Please do not share details of the discussion later, whether with people who are present or not. If someone asks, explain that you were speaking about the health concerns of women and girls

We are conducting 8 focus groups in two camps in Port-au-Prince. Your voice will represent the community but there will be no benefit to you directly for participating in this discussion.

Do you give us permission to begin the discussion?

Do you give us permission to take notes?

_____
(signature of facilitator)

Date:

CONSENT FORM FOR WOMEN 18 YEARS OF AGE AND OLDER

Introduction to inform you on your consent:

I am _____ and I'm working for International Rescue Committee (IRC). We're conducting a survey on life experiences of women in camp. The goal of the survey is based on the experience and security of the community.

Participation will depend on your willingness (whole voluntarily). This survey will help us learn more about the lives and experiences of girls in the community. There are no dangers (or low risk) for you and your family that participate in this survey. There will be no consequences if you do not participate in this survey. There are no benefits/profits for your participation. You will not get money or gifts or money for participating in this survey.

We chose you by chance to participate in this survey of a list of women from 14 years and up. [IF NECESSARY SHOW PEOPLE LIVING IN THE HOUSE THAT HAVE BEEN SELECTED BY CHANCE]. I want to ensure your answer will remain a secret. I will not write your name or your address. You may stop our conversation any time, or not answer questions that you do not want to answer. Participation will depend on your willingness (whole voluntarily), but your experience can help other Haitians. Thank you for answering the questions with honesty.

If you have questions about your rights in this survey or procedure that follow, you can contact a local which is XXXXXXXX who is ready to talk to you and answer your question or capable of directing someone to that can help. Please be comfortable if you want to take notes as reference.

Do you have questions?

Is this the right time for us to talk?

Can I ask you some? The survey will take 20 minutes to finish.

☐ DON'T AGREE TO ANSWER THE SURVEY

☐ AGREE TO ANSWER THE SURVEY

PARENTAL CONSENT TO GIVE AUTHORIZATION TO INTERVIEW FEMALES 14 TO 17 YEARS OF AGE

INTRODUCTION TO INFORM YOU ON YOUR CONSENT

I am _____ and I'm working for International Rescue Committee (IRC). We're conducting a survey on life experiences of women in camp. The goal of the survey is based on the experience and security of the community.

This survey will help us learn more about their lives and experiences in the community. There are no dangers (or low risk) for you and your family that participate in this survey. There will be no consequences if you do not participate in this survey. There are no benefits/profits for your participation. You will not get money or gifts or money for participating in this survey.

We chose her by chance for this survey. [THE AGENT WILL EXPLAIN HOW SHE WAS CHOSEN BY CHANCE]. I want to ensure your answer will remain a secret. I will not write your name or your address. You may stop our conversation any time, or not answer questions that you do not want to answer. Participation will depend on your willingness (whole voluntarily), but your experience can help other Haitians. Thank you for answering the questions with honesty.

DO YOU HAVE QUESTIONS?

If you have more questions regarding your rights or procedures that I am following, you may write to IRC. I already gave you the contact information of a person you can get in touch with that is capable of answering all of your questions. Please be comfortable if you want to take notes as reference.

Will there be problem for us to ask the girl living in this house chosen for this survey several questions regarding her daily life and her security in the camp. The survey will take 20 minutes to finish.

REMEMBER IT'S EITHER THE PARENT AGREE OR DISAGREE WITH THE MEETING

- ☐ DOES'T AGREE TO TALK TO PERSON DOING THE SURVEY (CONTINUE WITH THE OTHER PARAGRAPGH TO ASK THE PARENT TO PARTICIPATE)
- ☐ ACCEPT TO ANSWER THE SURVEY

Can you talk now?

CONSENT FORM FOR GIRLS UNDER 18 YEARS OF AGE/ THE PARENTS AGREE

I am _____ I work for International Rescue Committee IRC. We are doing this survey in Haiti for us to learn the experiences and the security of the daily lives young girls and women live through.

We will only question young girls aged 14 and more. We chose you in this area by chance from the women and girls living in the houses [THE INVESTIGATOR WILL EXPLAIN HOW SHE WAS CHOSEN BY CHANCE]. Only the girls living in the houses selected by chance in the area will participate in the survey*. I received the authorization of your parents to talk to you.*

We are doing this survey to help us make decisions (or take information) on the daily security in the girls live daily life.

If you choose to participate in this survey, I will ask you some questions on yourself and how are you living. I will ask you to remember certain things, and to tell me of certain things that happened to you and certain different things that you might have done. I assure you that all your answers will stay a secret. I will not write your name or your address. Only the people in the community that can really help us in our research especially the young girls and women chosen for this survey. You can stop the conversation any time, or don't answer questions that you don't want to answer. Participation will depend on your willingness (whole voluntarily), but your experience will be a great help.

There are no dangers (or little risk) for either you or your family participating in the survey. There will be no consequences if you do not participate in this survey. There are no benefits/profits for your participation. You will not get money or gifts or money for participating in this survey

Do you have other questions?

Can I ask you several questions? The interview will take 15 minutes.

- ☐ **DON'T AGREE TO DISCUSS THE SURVEY.**
- ☐ **AGREE TO DISCUSS THE SURVEY.**

If you have questions about your rights in this survey or procedure that follow, you can contact a local which is XXXXXXXX who is ready to talk to you and answer your question or capable of directing someone to that can help. Please be comfortable if you want to take notes as reference.

Is this a good place for us to talk? Or is there much better place you would prefer to go and talk?

THIS INFORMATION FORM WILL BE READ BEFORE THE FATHER OR AN ADULT MAN IN THE HOUSE

INTRODUCTION TO INFORM YOU ON YOUR CONSENT:

I am _____ and I work for International Rescue Committee (IRC). We are doing a survey on the experience that young girls and women have in the camp. The goal of the survey is based on their security and experiences in the community.

Before we start talking with a women or a girl, we would like to have the age and sex of each members in the house. Participation will depend on your willingness (whole voluntarily) but this small conversation will help us understand better the safety of women and girls in your community.

There aren't any dangers (or little risk) for either you or your family participating in the survey. There will be no consequences if you do not participate in this survey. There are no benefits/profits for your participation. You will not get money or gifts or money for participating in this survey.

Your house was chosen by chance to participate in this survey. [THE INVESTIGATOR WILL EXPLAIN HOW THE HOUSE WAS CHOSEN BY CHANCE]. I want to ensure your answer will remain a secret. I will not write your name or your address. You may stop our conversation any time, or not answer questions that you do not want to answer. Participation will depend on your willingness (whole voluntarily), but your experience can help other Haitians.

If you have questions about your rights in this survey or procedure that follow, you can contact a local which is XXXXXXXX who is ready to talk to you and answer your question or capable of directing someone to that can help. Please be comfortable if you want to take notes as reference.

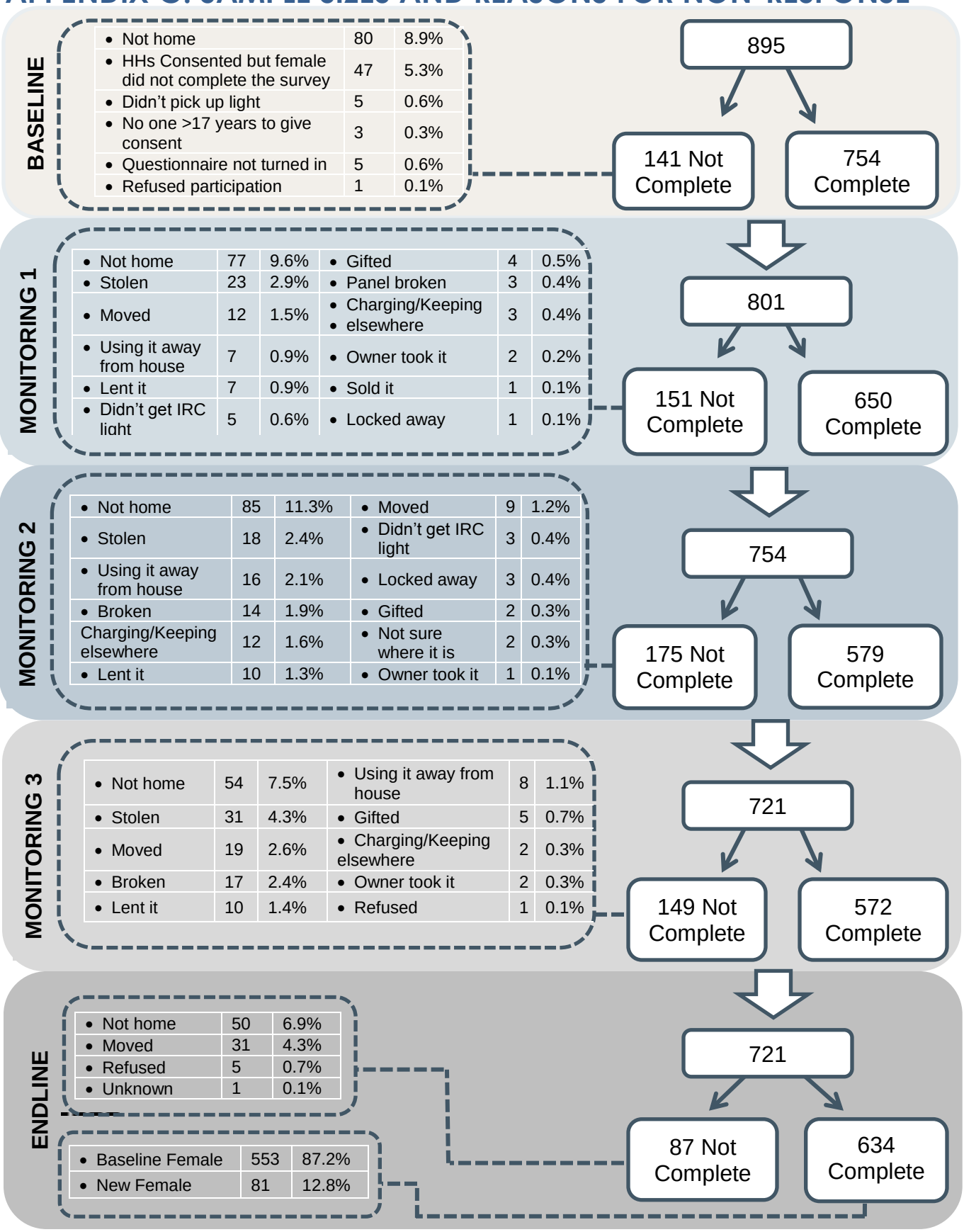
The survey will take 20 minutes.
Can you talk now?

Do you agree to participate?

☐ YES THE PERSON AGREE TO PARTICIPATE IN THE SURVEY

☐ NO THE PERSON DOESN'T AGREE TO PARTICIPATE IN THE SURVEY

APPENDIX G: SAMPLE SIZES AND REASONS FOR NON-RESPONSE



APPENDIX H: ENDLINE AGE GROUP COMPARISON TABLES

Table H1 Endline demographic characteristics among females age ≥14 years in two camps in Haiti

	Total (N = 634)		14-19 years old (n = 84)		≥20 years old (n = 550)		
Characteristic	N	%	N	%	N	%	p-value*
Camp							0.017
Camp Sinai	271	42.7	46	54.8	225	40.9	
Camp Toto	363	57.3	38	45.2	325	59.1	
Education of selected female							<0.001†
Not attending school	59	9.3	0	0.0	59	10.7	
Primary level	193	30.4	18	21.4	175	31.8	
High school level	356	56.2	66	78.6	290	52.7	
Vocational or Literacy school	13	2.1	0	0.0	13	2.4	
College – certificate or diploma	10	1.6	0	0.0	10	1.8	
No response	1	0.2	0	0.0	1	0.2	
Don't know	2	0.3	0	0.0	2	0.4	
Number of household members							
Average (SE)	4.2	0.1	4.3	0.2	4.2	0.1	0.496
Number of household members categories							0.594†
1	5	0.8	1	1.2	4	0.7	
2	84	13.3	10	11.9	74	13.5	
3	147	23.2	23	27.4	124	22.6	
4 to 5	276	43.5	32	38.1	244	44.4	
6 or more	119	18.8	18	21.4	101	18.4	
Time in camp (years)							
Average (SE)	3.6	0.0	3.2	0.1	3.6	0.0	0.006
Time in camp categories							<0.001
Under one year	17	2.7	7	8.3	10	1.8	
One to under two years	33	5.2	6	7.1	27	4.9	
Two to under three years	48	7.6	10	11.9	38	6.9	
Three or more years	536	84.5	61	72.6	475	86.4	

*Chi square p-value when categorical and t test statistic p-value when continuous;
† Fischer's Exact tests were done.

Table H2 Endline results of locations avoided in the last week due to safety concerns among females age ≥14 years in two camps in Haiti

Characteristic	14-19 years old (n = 84) N	14-19 years old (n = 84) %	≥20 years old (n = 550) N	≥20 years old (n = 550) %
Camp Sinai				
Able to go anywhere	7	15.2	69	30.7
Site of former school in Section C	14	30.4	33	14.7
Toilet area	13	28.3	57	25.3
Road coming from airport	12	26.1	63	28.0
Roads surrounding the camp	9	19.6	55	24.4
Entrance area to Section B	7	15.2	14	6.2
Water locations	4	8.7	23	10.2
Other location	4	8.7	14	6.2
Pathway to "blok ba"	3	6.5	13	5.8
Bottom of hill in Section D	3	6.5	21	9.3
Don't know	1	2.2	3	1.3
No response	0	0.0	1	0.4
Camp Toto				
Able to go anywhere	14	36.8	192	59.1
Ravine	9	23.7	46	14.2
Behind toilets/latrines	6	15.8	25	7.7
Path between Plateaux #1 and #7	4	10.5	17	5.3
Carradeux Road	3	7.9	23	7.1
Site of bus	2	5.3	13	4.0
Path to Camp Canaan	2	5.3	25	7.7
On the hills of Plateaux #7	2	5.3	12	3.7
Roads surrounding the camp	1	2.6	13	4.0
Other location	2	5.3	18	5.5
No response	2	5.3	8	2.5
Don't know	2	5.3	3	0.9

Table H3 Endline results of use of lighting at night in the last week among females age ≥14 years in two camps in Haiti

Characteristic	Total (N = 634) N	Total (N = 634) %	14-19 years old (n = 84) N	14-19 years old (n = 84) %	≥20 years old (n = 550) N	≥20 years old (n = 550) %	p-value*
Sources of lighting INSIDE the house							
Handheld solar light	537	84.8	74	88.1	463	84.3	0.428
Telephone flash	394	62.2	61	72.6	333	60.7	0.035
Public electricity	302	47.9	44	52.4	258	47.2	0.373
Candle	166	26.2	27	32.1	139	25.3	0.186
Traditional gas lamp	111	17.5	17	20.2	94	17.1	0.458
Flashlight	79	12.5	8	9.5	71	12.9	0.379
Other	5	0.8	0	0.0	5	0.9	1.000†
Sources of lighting OUTSIDE the house							
Handheld solar light	446	70.9	62	73.8	384	70.5	0.529
Telephone flash	339	53.6	54	64.3	285	51.9	0.034
Large solar panels on poles	245	38.8	24	28.6	221	40.3	0.619
Public electricity	104	16.4	12	14.3	92	16.8	0.569
Flashlight	70	11.1	11	13.1	59	10.8	0.527
Candle	69	10.9	9	10.7	60	10.9	0.953
Traditional gas lamp	40	6.3	2	2.4	38	6.9	0.147
Other	6	1.0	1	1.2	5	0.9	0.578†
	Total (N = 634)		14-19 years old (n=84)		≥20 years old (n = 550)		
Number of working flashlights (excluding handheld solar light)							0.510†
0	536	84.7	72	85.7	464	84.4	
1	87	13.7	12	14.2	75	13.7	
More than 1	9	1.4	0	0.0	9	1.6	
Missing	1	0.2	0	0.0	1	0.2	
Number of non-working flashlights (excluding handheld solar light)							0.164
0	543	85.8	76	90.5	467	85.1	
1	74	11.7	7	8.3	67	12.2	
More than 1	12	1.9	1	1.2	11	2.0	
Missing	1	0.2	0	0.0	1	0.2	

*Chi square p-value;

† Fischer's Exact tests were done.

Table H4 Endline results for use of handheld solar lights among females age ≥14 years in two camps in Haiti

Characteristic	Total (N = 634) N	%	14-19 years old (n = 84) N	%	≥20 years old (n = 550) N	%	p-value*
Frequency of handheld solar light use							0.576†
Never	15	2.4	2	2.4	13	2.4	
Once a week	4	0.6	1	1.2	3	0.6	
Once a day	256	40.4	30	35.7	226	41.1	
More than once a day	350	55.2	51	60.7	299	54.4	
No response	6	1.0	0	0.0	6	1.1	
Don't know	0	0.0	0	0.0	0	0.0	
Missing	3	0.5	0	0.0	3	0.6	

*Chi square p-value when categorical and t test statistic p-value when continuous;

† Fischer's Exact tests were done.

Table H5 Endline results for use of handheld solar lights outside the home at night among females age ≥14 years in two camps in Haiti

Characteristic	Total (N = 218) N	%	14-19 years old (n = 33) N	%	≥20 years old (n = 185) N	%	p-value*
Use of handheld solar light in the last week when going out							0.115†
Used it	148	67.9	19	57.6	129	69.7	
Did not use	55	25.2	12	36.4	43	23.2	
Light unavailable	13	6.0	2	6.1	11	6.0	
Did not receive lamp	2	0.9	0	0.0	2	1.1	
Use of handheld solar light last time when going out							0.169
Used it	140	64.8	19	57.6	121	66.1	
Did not use	61	28.2	13	39.4	48	26.2	
Light unavailable	15	6.9	1	3.0	14	7.7	
Missing	2	0.9	0	0	2	1.1	
	Total (N = 148)		14-19 years old (n = 18)		≥20 years old (n = 130)		
Use of handheld solar light in the last week when going out ALONE							0.442†
Used it	103	69.6	12	66.7	91	70.0	
Did not use	36	24.3	6	33.3	30	23.1	
Light unavailable	7	4.7	0	0.0	7	5.4	
Did not receive lamp	2	1.4	0	0.0	2	1.5	
Use of handheld solar light last time when going out ALONE							0.505†
Used it	101	69.2	12	66.7	89	69.5	
Did not use	37	25.3	6	33.3	31	24.2	
Light unavailable	8	5.5	0	0.0	8	6.3	
Missing	2	1.4	0	0.0	2	1.5	

*Chi square p-value;

† Fischer's Exact tests were done.

Table H6 Endline results of handheld solar light satisfaction among females age ≥14 years in two camps in Haiti

Characteristic	Total (N = 634) N	%	14-19 years old (n = 84) N	%	≥20 years old (n = 550) N	%	p-value*
Recommend handheld solar light to friends and family							1.000†
No	3	0.5	0	0.0	3	0.6	
Yes	612	96.5	82	97.6	530	96.4	
No response	3	0.5	0	0.0	0	0.0	
Missing	16	2.5	2	2.4	14	2.6	
Handheld solar light comparison to other lighting							0.282†
Better	585	92.3	76	90.5	509	92.6	
Same	16	2.5	5	6.0	11	2.0	
Worse	4	0.6	0	0.0	4	0.7	
No response	2	0.3	0	0.0	2	0.4	
Don't know	10	1.6	1	1.3	9	1.6	
Missing	17	2.7	2	2.4	15	2.7	

*Chi square p-value;

† Fischer's Exact tests were done.

Table H7 Endline results of handheld solar light status among females age ≥14 years in two camps in Haiti

Characteristic	Total (N = 634) N	%	14-19 years old (n = 84) N	%	≥20 years old (n = 550) N	%	p-value*
Ownership of handheld solar light							0.461
Still owns it	533	84.1	73	86.9	460	83.6	
No longer owns it	92	14.5	10	11.9	82	14.9	
Missing	8	1.3	1	1.2	7	1.3	
	Total (N = 533)		14-19 years old (n = 73)		≥20 years old (n = 460)		
Light shown or not (still owned)							0.724†
Light shown when asked	418	78.4	55	75.3	363	78.9	
Only light was shown	40	7.5	7	9.6	33	7.2	
Only panel was shown	3	0.6	0	0.0	3	0.7	
Missing	1	0.2	0	0.0	1	0.2	
Current charge status (still owned and shown)							0.683†
Charged	340	63.8	49	67.1	291	63.3	
On charger	164	30.8	21	28.8	143	31.1	
No time to charge	7	1.3	0	0.0	7	1.5	
Forgot to charge	6	1.1	1	1.4	5	1.1	
Broken solar panel	3	0.6	1	1.4	2	0.4	
Other	12	2.3	1	1.4	11	2.4	
Missing	1	0.2	0	0.0	1	0.2	
	Total (N = 72)		14-19 years old (n = 11)		≥20 years old (n = 61)		
Current light status (still owned but not shown)							0.201†
Charged away from the house	34	47.2	5	45.5	29	47.5	
Being borrowed	12	16.7	0	0.0	12	19.7	
Used away from house	9	12.5	2	18.2	7	11.5	
Locked away in house	3	4.2	1	9.1	2	3.3	
Kept away from the house for safety	3	4.2	1	9.1	2	3.3	
Missing	10	13.9	1	9.1	9	14.8	
Non-response	1	1.4	1	1.2	0	0.0	
	Total (N = 92)		14-19 years old (n = 10)		≥20 years old (n = 82)		

Status of solar light (no longer owned)							0.307[†]
Light/Panel **stolen**	64	69.6	8	80.0	56	68.3	
Light/Panel/Cable **broken**	10	10.9	0	0.0	10	12.2	
Gave light as a gift	9	9.8	0	0.0	9	1.6	
Never received the lamp	1	1.1	0	0.0	1	1.2	
Other	8	8.7	2	20.0	6	7.3	
Length of time before light was stolen/lost/broken/gifted/sold (months)							
Average (SE)	1.6	0.2	0.9	0.4	1.7	0.2	0.131

*Chi square p-value when categorical and t test statistic p-value when continuous;

[†] Fischer's Exact tests were done.

Table H8 Endline results of handheld solar light maintenance among females age ≥14 years in two camps in Haiti

Characteristic	Total (N = 634) N	%	14-19 years old (n = 84) N	%	≥20 years old (n = 550) N	%	p-value*
Length of time to charge the solar light (in hours)							
Average (SE)	5.3	0.2	5.3	0.4	5.3	0.2	0.913
Perception of lengthiness of charge time							0.020
Does not feel it takes too long	328	51.7	33	39.3	295	53.6	
Feels it takes too long	195	30.8	38	45.2	157	28.6	
No response	3	0.5	0	0.0	3	0.6	
Don't know	90	14.2	10	11.9	80	14.6	
Missing	18	2.8	3	3.6	15	2.7	
Lamp/panel/cable has broken							0.104†
Nothing broke	483	76.2	61	72.6	422	76.7	
Cable only	45	7.1	10	11.9	35	6.4	
Lamp only	22	3.5	1	1.3	21	3.8	
Panel only	12	1.9	2	2.4	10	1.8	
Panel and cable	4	0.6	0	0.0	4	0.7	
Lamp and panel	2	0.3	0	0.0	2	0.4	
No response	1	0.2	1	1.2	0	0.0	
Don't know	3	0.5	1	1.2	2	0.4	
Missing	62	9.8	8	9.5	54	9.8	
	Total (N = 89)		14-19 years old (n = 15)		≥20 years old (n = 74)		
Lamp/panel/cable has been fixed							0.698†
No - still broken	23	25.8	3	20.0	20	27.0	
No - still works	11	12.4	3	20.0	8	10.8	
Yes	18	20.2	2	13.3	16	21.6	
IRC gave me a new light	1	1.1	0	0.0	1	1.4	
Don't know	1	1.1	0	0.0	1	1.2	
Missing	35	39.3	7	46.7	28	37.8	
	Total (N = 18)		14-19 years old (n = 2)		≥20 years old (n = 16)		
Average time taken to fix the solar light							-
Less than 1 day	3	16.7	1	50.0	2	12.5	
1 day or more	7	38.9	0	0.0	7	43.8	

Missing	8	44.4	1	50.0	7	43.8

*Chi square p-value when categorical and t test statistic p-value when continuous;

† Fischer's Exact tests were done.

Table H9 Endline results for reasons females age ≥14 years reported for not going out at night in two camps in Haiti

Characteristic	Total (N = 634) N	%	14-19 years old (n = 84) N	%	≥20 years old (n = 550) N	%	p-value*
Stayed inside at night	415	65.6	52	61.9	363	66.1	0.449
	Total (N = 415)		14-19 years old (n = 52)		≥20 years old (n = 363)		
Reasons for not going out (missing = 1)							<0.001†
Feeling unprotected	304	73.4	23	45.1	281	77.4	
Instructed by parent/guardian	88	21.3	15	29.4	73	20.1	
Instructed by husband	10	2.4	7	13.7	3	0.8	
Instructed by parent/guardian and did not feel protected	7	1.7	6	11.8	1	0.3	
Instructed by husband and did not feel protected	1	0.2	0	0.0	1	0.3	
Other	4	1.0	0	0.0	4	1.1	
	Total (N = 220)		14-19 years old (n = 33)		≥20 years old (n = 187)		
Did not go outside the home at night ALONE	70	31.8	15	45.5	55	29.4	0.069
	Total (N = 70)		14-19 years old (n = 15)		≥20 years old (n = 55)		
Reasons for not going out ALONE (missing = 1)							0.016†
Feeling unprotected	40	6.3	5	6.0	35	6.4	
Instructed by parent/guardian	22	3.5	6	7.1	16	2.9	
Instructed by husband	3	0.5	2	2.4	1	0.2	
Instructed by parent/guardian and did not feel protected	2	0.3	2	2.4	1	0.2	
Instructed by husband and did not feel protected	1	0.2	0	0.0	1	0.2	
Other	1	0.2	0	0	0	0.0	

*Chi square p-value;

† Fischer's Exact tests were done.

Table H10 Endline results regarding perception of feeling protected from crime at night among females age ≥14 years in two camps in Haiti

Characteristic	Total (N = 634) N	%	14-19 years old (n = 84) N	%	≥20 years old (n = 550) N	%	p-value*
Felt protected against crime	360	56.8	45	53.6	315	57.3	0.524
	Total (N = 360)		14-19 years old (n = 45)		≥20 years old (n = 315)		
Reasons for feeling protected against crime							
Presence of MINUSTAH	191	53.1	17	37.8	174	55.2	0.028
Presence of PNH	189	52.5	20	44.4	169	53.7	0.248
God	182	50.6	18	40.0	164	52.1	0.131
Lighting in the camp	71	19.7	8	17.8	63	20.0	0.726
Presence of a Camp Committee	35	9.7	1	2.2	34	10.8	0.102
Brigade (community patrolling)	25	6.9	3	6.7	22	7.0	1.000
Using handheld solar lamp	27	7.5	2	4.4	25	7.9	0.554
Walking with others in a group	19	5.3	3	6.7	16	5.1	0.718
Presence of women's groups	9	2.5	0	0.0	9	2.9	0.609†
Gate at entrances	9	2.5	1	2.2	8	2.5	1.000†
Enclosure surrounding the camp	3	0.8	0	0.0	3	1.0	1.000†
Other	52	14.1	10	22.2	42	13.3	0.113
Non-response	4	0.6	0	0.0	4	1.3	-
	Total (N = 220)		14-19 years old (n = 34)		≥20 years old (n = 186)		
Felt protected against <u>crime outside the home</u>	128	58.2	18	52.9	110	59.1	0.501
	Total (N = 128)		14-19 years old (n = 18)		≥20 years old (n = 110)		
Reasons for feeling protected against crime <u>outside the home</u>							
Presence of PNH	69	53.9	8.0	44.4	61	55.5	0.387
Presence of MINUSTAH	66	51.6	7.0	38.9	59	53.6	0.248
God	60	46.9	8	44.4	52	47.3	0.824
Lighting in the camp	42	32.8	6	33.3	36	32.7	0.960
Walking with others in a group	29	22.7	7	38.9	22	20.0	0.077
Using the handheld solar lamp	18	14.1	0	0.0	18	16.4	0.074

Presence of a Camp Committee	9	7.0	1	5.6	8	7.3	1.000†
Gate at entrances	3	2.3	0	0.0	3	2.7	-
Presence of women's services/groups	2	1.6	0	0.0	2	1.8	1.000†
Brigade (community members patrolling) in the area	0	0.0	0	0.0	0	0.0	-
Enclosure surrounding the camp	0	0.0	0	0.0	0	0.0	-
Other	15	11.7	1	5.6	14	12.7	0.693
	Total (N = 146)		14-19 years old (n = 17)		≥20 years old (n = 129)		
Felt protected against crime <u>outside the home</u> when ALONE	81	55.5	10	58.8	71	55.0	0.769
	Total (N = 81)		14-19 years old (n = 10)		≥20 years old (n = 71)		
Reasons for feeling protected against crime <u>outside the home</u> when ALONE							
Presence of MINUSTAH	47	58.0	5	50.0	42	59.2	0.585
Presence of PNH	47	58.0	4	40.0	43	60.6	0.307
God	45	55.6	5	50.0	40	56.3	0.745
Lighting in the camp	30	37.0	4	40.0	26	36.6	1.000
Using the handheld solar lamp	12	14.8	0	0.0	12	16.9	0.344
Presence of a Camp Committee	8	9.9	0	0.0	8	11.3	0.589†
Walking with others in a group	6	7.4	1	10.0	5	7.0	0.559†
Brigade (community patrolling)	2	2.5	0	0.0	2	2.8	1.000†
Gate at entrances	2	2.5	0	0.0	2	2.8	1.000†
Enclosure surrounding the camp	2	2.5	0	0.0	2	2.8	1.000†
Presence of women's groups	1	1.2	0	0.0	1	1.4	1.000†
Other	6	7.4	1	10.0	5	7.0	0.559†

*Chi square p-value;

† Fischer's Exact tests were done.

Table H11 Endline results regarding perception of feeling unprotected at night among females age ≥14 years in two camps in Haiti

Characteristic	Total (N = 634) N	%	14-19 years old (n = 84) N	%	≥20 years old (n = 550) N	%	p-value*
Felt unprotected from crime	283	44.6	41	48.8	242	44.0	0.409
	Total (N = 283)		14-19 years old (n = 41)		≥20 years old (n = 242)		
Reasons for feeling unprotected							
Ability of people to slash and enter tents	153	54.1	25	61.0	128	52.9	0.338
Thugs	135	47.7	21	51.2	114	47.1	0.627
Loud noise/cursing	132	46.6	13	31.7	119	49.2	0.039
Physical violence	122	43.1	14	34.2	108	44.6	0.211
Rock/bottle throwing	96	33.9	8	19.5	88	36.4	0.035
Hearing gun shots	86	30.4	18	43.9	68	28.1	0.042
Werewolves	63	22.3	10	24.4	53	21.9	0.724
Not enough lighting in the camp	37	13.1	3	7.3	34	14.1	0.320
Sexual violence	26	9.2	6	14.6	20	8.3	0.192
Harassment	21	7.4	6.0	14.6	15	6.2	0.057
No gate at entrances	16	5.6	2	4.9	14	5.8	1.000
Other	26	9.2	0	0.0	26	10.7	0.020
No response	1	0.4	0	0.0	1	0.4	1.000
	Total (N = 218)		14-19 years old (n = 33)		≥20 years old (n = 185)		
Felt unprotected from crime <u>outside the home</u>	97	44.5	16	48.5	81	43.8	0.616
	Total (N = 97)		14-19 years old (n =16)		≥20 years old (n = 81)		
Reasons for feeling unprotected from crime <u>outside the home</u>							
Thugs	57	58.8	11	68.8	46	56.8	0.377
Ability of people to slash and enter tents	38	39.1	8	50.0	30	37.0	0.334
Loud noise/cursing	37	38.1	5	31.3	32	39.5	0.537
Hearing gun shots	34	35.1	7	43.8	27	33.3	0.427
Physical violence	28	28.9	4	25.0	24	29.6	0.710
Rock/bottle throwing	22	22.7	1	6.3	21	25.9	0.109
Not enough lighting in the camp	21	21.7	4	25.0	17	21.0	0.744
Sexual violence	19	19.6	8	50.0	11	13.6	0.001

Werewolves	16	16.5	1	6.3	15	18.5	0.459
Harassment	8	8.3	3	18.8	5	6.2	0.123†
No gate at entrances	6	6.2	3	18.8	3	3.7	0.055†
Other	8	8.3	0	0.0	8	9.9	0.346†
	Total (N = 150)		14-19 years old (n = 18)		≥20 years old (n = 132)		
Felt unprotected from crime <u>outside the home</u> when ALONE	68	45.3	9	50.0	59	44.7	0.673
	Total (N = 68)		14-19 years old (n = 9)		≥20 years old (n = 59)		
Reasons for feeling unprotected from crime <u>outside the home</u> when ALONE							
Thugs	46	67.7	5	55.6	41	69.5	0.456
Physical violence	27	39.7	3	33.3	24	40.7	1.000
Loud noise/cursing	24	35.3	3	33.3	21	35.6	1.000
Hearing gun shots	23	33.8	5	55.6	18	30.5	0.255
Ability of people to slash and enter tents	22	32.4	2	22.2	20	33.9	0.707
Rock/bottle throwing	18	26.5	1	11.1	17	28.8	0.427
Sexual violence	13	19.1	4	44.4	9	15.3	0.060
Werewolves	13	19.1	1	11.1	12	20.3	1.000
Not enough lighting in the camp	13	19.1	2	22.2	11	18.6	1.000
Harassment	6	8.8	4	44.4	2	3.4	0.002†
No gate at entrances	1	1.5	0	0.0	1.00	1.7	1.000†
Other	6	8.8	0	0.0	6	10.2	1.000†

*Chi square p-value;

† Fischer's Exact tests were done.

Table H12 Endline results of factors that would make females feel more protected among females age ≥14 years in two camps in Haiti

Characteristic	Total (N = 634)		14-19 years old (n = 84)		≥20 years old (n = 550)		
	N	%	N	%	N	%	p-value*
Factors that would make women feel more protected from crime at night							
Nothing would make me feel safer	42	6.6	6	7.1	36	6.6	0.838
More presence of PNH	425	67.0	54	64.3	371	67.5	0.565
More presence of MINUSTAH	251	39.6	33	39.3	218	39.6	0.951
Better lighting in the camp	186	28.3	26	31.0	160	29.1	0.727
More presence of a brigade in the area	175	27.6	23	27.4	152	27.6	0.961
More LARGE solar panels on poles	162	25.6	13	15.7	149	27.1	0.026
Living in a shelter rather than a tent	130	20.5	19	22.6	111	20.2	0.612
More presence of the camp committee	72	11.4	10	11.9	62	11.3	0.865
More handheld solar lights	69	10.9	4	4.8	65	11.8	0.059
Enclosure surrounding the camp	46	7.3	11	13.1	35	6.4	0.027
Gate at entrances of camp	29	4.6	7	8.3	22	4.0	0.077
Walking with others in a group	16	2.5	2	2.4	14	2.6	1.000
More presence of women's services/groups	7	1.1	2	2.4	5	0.9	0.235†
Other	36	5.7	3	3.6	33	6.0	0.610
No response	3	0.5	0	0.0	3	0.6	1.000†
Don’t know	9	1.4	2	2.4	7	1.3	0.340†
Presence seen in the camp in the last week							
PNH	446	70.5	48	57.1	398	72.5	0.003
Member of a camp committee	440	69.7	55	65.5	385	70.4	0.486
Member of an NGO	408	64.5	49	58.3	359	65.4	0.447
Member of women's services / groups	394	62.3	46	55.4	348	63.4	0.293
MINUSTAH	393	62.2	40	47.6	353	64.4	0.003
Member from a brigade	170	26.9	22	26.2	148	27.0	0.823

*Chi square p-value;

† Fischer’s Exact tests were done.

Table H13 Endline results for activities outside of the home among females age ≥14 years in two camps in Haiti

	Total (N = 634)		14-19 years old (n = 84)		≥20 years old (n = 550)		
Characteristic	N	%	N	%	N	%	p-value*
Daytime activities conducted outside the home							
Domestic tasks	599	94.5	78	92.9	521	94.7	0.485
Gathering water	400	63.1	55	65.5	345	62.7	0.627
Market	389	61.4	50	59.5	339	61.6	0.711
Religion	302	47.6	39	46.4	263	47.8	0.812
Work	265	41.8	6	7.1	259	47.1	<0.0001
Talk friends	182	28.7	31	36.9	151	27.5	0.075
School	109	17.2	61	72.6	48	8.7	<0.0001
TV	71	11.2	17	20.2	54	9.8	0.005
Text friends	68	10.7	13	15.5	55	10.0	0.131
Sleep	60	9.5	15	17.9	45	8.2	0.005
Other	39	6.2	3	3.6	36	6.6	0.462
	Total (N = 219)		14-19 years old (n = 18)		≥20 years old (n = 110)		
Nighttime activities conducted outside home							
Personal (e.g., bathroom)	179	81.7	26	78.8	153	82.3	0.635
Obtain necessities	151	69.0	26	78.8	125	67.2	0.186
Religion	116	53.0	18	54.6	98	52.7	0.844
Social	53	24.2	7	21.2	46	24.7	0.664
Work	35	16.0	3	9.1	32	17.2	0.309
Other	9	4.1	3	9.1	6	3.2	0.140
	Total (N = 149)		14-19 years old (n = 18)		≥20 years old (n = 131)		
Nighttime activities conducted outside the home **ALONE**							
Personal (e.g., bathroom)	130	87.3	14	77.8	116	88.6	0.250
Obtain necessities	116	77.9	16	88.9	100	76.3	0.364
Religion	84	56.8	13	72.2	71	54.6	0.159
Social	39	26.4	2	11.8	37	28.2	0.240
Work	27	18.1	1	5.6	26	19.9	0.198
Other	3	2.0	1	5.6	2	1.5	0.324

*Chi square p-value

APPENDIX I: MONITORING VISIT RESULTS FOR USE OF SOLAR LIGHT AMONG HOUSEHOLD MEMBER

Table I. Monitoring visit results for use and purpose of use of handheld solar lights among household members by age groups in two camps in Haiti

	MV1						MV2						MV3					
FEMALES	5-13 Years (n =78)		14-19 Years (n = 199)		≥20 years (n = 841)		5-13 Years (n = 147)		14-19 Years (n = 183)		≥20 Years (n = 756)		5-13 Years (n = 204)		14-19 Years (n = 196)		≥20 Years (n = 732)	
Household solar light in the last week																		
	77	100.0	199	100.0	841	99.9	147	92.5	183	98.9	755	99.5	203	93.1	196	100.0	732	99.9
Location of use																		
Inside only	63	80.8	111	55.8	394	46.9	105	71.4	78	42.6	294	39.0	153	75.4	69	35.2	287	39.2
Outside only	0	0.0	1	0.5	1	0.1	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	1	0.1
Both	15	19.2	87	43.7	445	53.0	42	28.6	105	57.4	457	60.1	50	24.6	127	64.8	444	60.7
Purpose																		
Lighting room	134	91.2	179	97.8	745	98.5	203	99.5	194	99.0	729	99.6	203	99.5	194	99.0	729	99.6
Reading	66	84.6	96	48.2	75	8.9	107	72.8	103	56.3	98	13.0	124	60.8	125	63.8	112	15.3
Toilet	14	18.0	77	38.7	368	43.8	31	21.1	97	53.0	411	54.4	50	24.5	119	60.7	400	54.7
Charging phone	6	7.7	100	50.3	493	58.6	3	2.0	90	49.2	433	57.3	6	2.9	79	40.3	370	50.6
Walking outside	3	3.9	16	8.0	94	11.2	2	1.4	14	7.7	115	15.2	4	2.0	15	7.7	98	13.4
Cooking	1	1.3	35	17.6	266	31.6	7	4.8	42	23.0	356	47.1	4	2.0	65	33.2	411	56.2
MALES	5-13 Years (n = 43)		14-19 Years (n = 131)		≥20 (n = 577)		5-13 Years (n = 115)		14-19 Years (n = 113)		≥20 (n = 521)		5-13 Years (n = 149)		14-19 Years (n = 147)		≥20 (n = 560)	
Handheld solar light use in the last week																		
	43	100.0	130	100.0	576	99.7	115	89.8	113	99.1	520	98.7	149	93.7	147	99.3	560	100.0
Location of use																		
Inside only	37	86.1	73	55.7	294	51.0	86	75.4	58	51.3	230	44.2	118	79.2	68	46.3	250	44.6
Outside only	0	0.0	1	0.8	0	0.0	0	0.0	0	0.0	2	0.4	0	0.0	0	0.0	1	0.2
Both	6	14.0	57	43.5	283	49.1	28	24.6	55	48.7	287	55.2	31	20.8	79	53.4	309	55.2
Purpose of handheld solar light use																		
Reading	39	90.7	66	50.4	54	9.4	82	71.3	60	53.1	71	13.6	86	57.7	83	56.5	95	17.0

Light room	35	81.4	124	94.7	567	98.3	102	88.7	111	98.2	509	97.7	146	98.0	146	99.3	556	99.3
Toilet	4	9.3	45	34.4	230	39.9	23	20.0	52	46.0	268	51.4	34	22.8	82	55.8	293	52.3
Charging phone	2	4.7	68	51.9	339	58.8	4	3.5	59	52.2	291	55.9	5	3.4	58	39.5	301	53.8
Walking outside	2	4.7	9	6.9	55	9.5	1	0.9	8	7.1	48	9.2	1	0.7	11	7.5	66	11.8
Cooking	1	2.3	5	3.8	27	4.7	0	0.0	6	5.3	32	6.1	5	3.4	12	8.2	21	3.8