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Menstrual Education and Personal Hygiene Supplies to Empower Young Women in Haiti

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Abstract

Recent studies report that Haitian women are concerned about unmet women's health issues. The Days for Girls (DfG) International program features women's health education and personal hygiene kits to ensure women understand the process of menstruation and sanitary hygiene practices. The aim was to train Haitian seamstresses to produce the DfG kits during an in-country workshop and investigate the perceived benefit of the DfG program in young women who used the DfG kits. Posttest only design was used to measure the effectiveness of DfG workshop and postsurvey to study perception of women using DfG kits. It was found that the workshop participants demonstrated an understanding of the DfG program (90% average). Forty-four young women (89.8%) who used the DfG hygiene kits for 2 months agreed that there is a need for feminine hygiene programs in Haiti and that the kits were easy to use and clean (97.1% and 92.1%, respectively). The DfG program could provide a cost-effective feminine hygiene program for Haiti and decrease waste from traditional hygiene products.

Keywords

women's reproductive health, feminine hygiene, reusable menstrual products, Days for Girls International

Introduction

The international response to Haiti's ongoing public health needs has focused on disaster relief and management of specific diseases including the recent cholera outbreak (Haar, Naderi, Acerra, Mathias, & Alagappan, 2012; Kligerman, Walmer, & Merrell, 2017; Piarroux & Frerichs, 2015; The United Nations Children's Fund [UNICEF], 2016; World Health Organization [WHO] Statistics: Haiti, 2016). Although these are critical needs, recent studies report that Haitian women are most concerned about pervasive and unmet basic health care needs including sanitation, women's reproductive health, and hygiene (Cianelli et al., 2014; Logie & Daniel, 2016; Urrutia et al., 2012). Several international organizations have responded to the challenge of providing low-cost and sustainable solutions for women's health by developing menstrual education and reusable forms of personal hygiene supplies. Occupational therapy (OT) practitioners working in low-resource countries are positioned to offer innovative solutions to women's feminine hygiene needs, promote health equity, and help develop healthy patterns of occupation that meet the health needs of this population. OT practitioners are well-suited to address menstrual education and women's health issues due to a strong foundation in the biological, physical, social, and behavioral sciences that support an understanding of occupations across the life span and knowledge of the daily roles and habits of individuals in different contexts. The act of toileting and toileting hygiene is clearly defined in the "Occupational Therapy Practice Framework" (2014) and includes caring for menstrual and continence needs. This basic activity of daily living is an essential hygiene practice for all women and OT practitioners can empower client engagement and participation in positive habits and health-promoting hygiene practices.

Days for Girls (DfG) International

DfG International is a 501(c)3 nonprofit organization leading this effort and, since 2008, the DfG program has established chapters in over 550 locations across 85 countries reaching over 200,000 women (http://www.daysforgirls.

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org/). Program articles can be found in the *Stanford Social Innovation Review*, *Oprah Magazine*, the *Huffington Post*, and *National Public Radio* and the organization was featured in the 2013 United Nations (UN) Commission on the Status of Women report (United Nations Commission for Women, 2013). The DfG concept is simple: In-country chapters are trained how to produce and distribute menstrual education and reusable personal hygiene kits that consist of cloth pads with plastic pads that can be washed with little water and can be reused for up to 3 years.

The DfG International program was designed to ensure young women understand the process of menstruation and have solutions for personal feminine hygiene. A lack of sanitary personal hygiene supplies is one among many reasons why girls may miss school in low-income countries such as Haiti. Recent studies have determined the influence of menstruation and access to sanitary products on schoolgirl absenteeism (Grant, Lloyd, & Mensch, 2013; Malusu & Zani, 2014; Mason et al., 2013; McMahon et al., 2011; Sommer, 2010; Sommer, Hirsch, Nathanson, & Parker, 2015). In countries where DfG International has chapters, they found that young women frequently miss 4 to 5 days of school each month due to lack of feminine hygiene supplies and these frequent and persistent absences lead to a high rate of females leaving secondary school within 2 years of starting menstruation (DfG Annual Report, 2015; Jewitt & Ryley, 2014). In countries that the DfG program has been successfully implemented, the program has been shown to improve girls' attendance in secondary school and reduce the social stigma from unsanitary and unhealthy feminine hygiene habits (DfG Annual Report, 2015; Jewitt & Ryley, 2014).

Feminine Hygiene Practices in Haiti

Few studies have been published on the feminine hygiene practices of Haitian women related to menstruation. Cross-culturally, social norms and beliefs about gynecological health, cleanliness, and female sexual desirability influence women's feminine hygiene health behaviors (Imade, Sagay, Onwuliri, Egah, & Short, 2005; Kukulu, 2006; McKee, Baquero, Anderson, Alvarez, & Karasz, 2009). Broadly, feminine hygiene practices may stem from cultural notions of purity related to blood and corresponding practices of segregating of women during menstruation and the postpartum period to prevent contamination/pollution. Globally, studies on feminine hygiene practices have focused on the relationship of hygiene practices to cervical cancer, infections, and sexually transmitted diseases (Anderson, McKee, Yukes, Alvarez, & Karasz, 2008; Halperin, 1999; Kun, 1998; Myer et al., 2005).

Public Health Issues in Haiti

In addition to addressing unmet women's health issues, a DfG program in Haiti could provide cost-effective, reusable personal hygiene supplies, lessening the waste products accumulated from traditional feminine hygiene materials. Haiti is known for having ineffective and poor governmental systems for waste management and disposal. Most households use gullies to eliminate waste and few families report they own a latrine (Bras, Berdiera, Emmanuelb, & Zimmermana, 2009; Russel et al., 2015; William et al., 2015; The World Bank, 2015). When latrines are available, they are not private and may only be an uncovered hole in the ground. As waste and trash become mixed with the water system, there is an increase in infectious diseases, such as cholera, which worsens during rainy seasons (Bras et al., 2009; Patrick et al., 2015; Piarroux & Frerichs, 2015; Russel et al., 2015; William et al., 2015).

A DfG program in Haiti has the potential to not only benefit women's health and feminine hygiene practices but also contribute to current efforts to improve waste management and sanitation. To date, the DfG has not been implemented in Haiti, therefore our research question is as follows:

> **Research Question 1:** What are the perceptions of women in Haiti who use the DfG feminine hygiene kits?

The specific aims of this study are to (1) conduct a DfG workshop training in Léogâne, Haiti for in-country collaborators and seamstresses who produced the DfG feminine hygiene kits and (2) pilot the DfG program with young women in Léogâne, Haiti. This study investigates the perceived benefit of the DfG program in Haiti in a group of young women and the potential influence on girls' school attendance.

Method

Design

For Specific Aim 1, a posttest only design was used to measure the effectiveness of the DfG training session immediately after the workshop was conducted in Léogâne, Haiti. For Specific Aim 2, a postsurvey only design was used to study the perceptions of young women who used the DfG feminine hygiene kits for 2 months.

Participants

For Specific Aim 1, the seven workshop participants included Haitian seamstresses and in-country collaborators from the nursing faculty at the Episcopal University of Haiti. The seamstresses had completed high school or vocational school and the nursing faculty had 4-year nursing degrees from the Episcopal University of Haiti (equivalent of a bachelor's degree). For Specific Aim 2, the 49 participants included young women, 18 to 24 years of age, who were enrolled in bachelor's degree nursing and rehabilitation programs at Episcopal University of Haiti in Léogâne, Haiti.

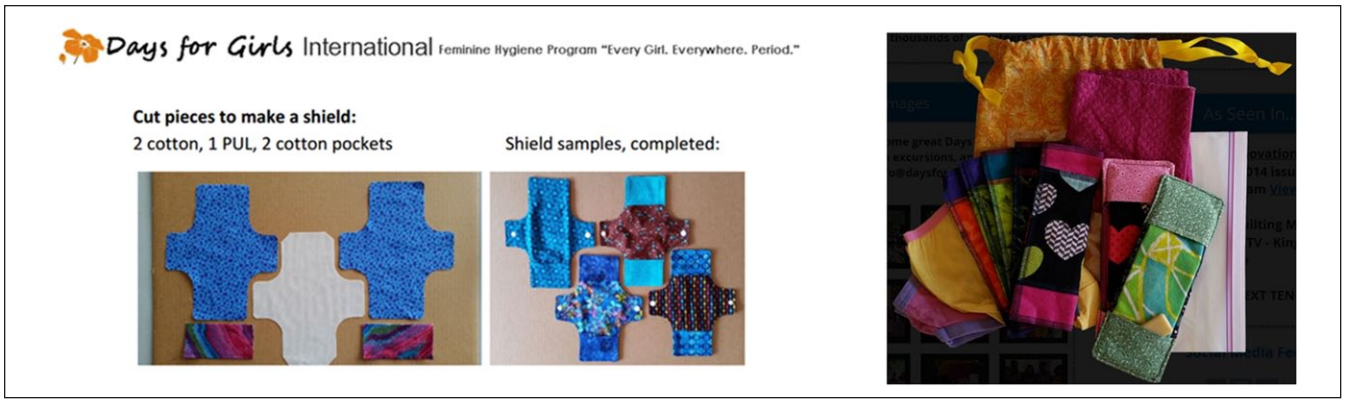

Figure 1. Days for Girls patterns and completed reusable hygiene kit with shields and pads.

This study was approved by the institutional review board at the Medical University of South Carolina and participants enrolled and consented to participate in this study. The participants were informed of the study's risks and benefits, their participation was voluntary, and their identity is not disclosed and any data described in this article.

Instruments

For Specific Aim 1, workshop participants were give a 25-question multiple-choice test with specific questions selected from the DfG Ambassador of Women's Health 101 training modules. (http://www.daysforgirls.org/ambassador-of-womens-health). The test was administered individually to each participant at the end of the 2-day workshop with an interpreter fluent in English and Kreyole.

For Specific Aim 2, all participants were surveyed 2 months after using the DfG reusable feminine hygiene kits. The survey included Likert-type scale questions (1 = *strongly disagree*, 2 = *disagree*, 3 = *agree*, 4 = *strongly agree*) to assess the young women's perceptions of the reusable personal hygiene kits including need for feminine hygiene in products in Haiti, ease for use, and ease for cleaning the reusable pads and shields. In addition, the survey had specific open-ended questions related to the perceived benefits of the DfG kits, any challenges or barriers, and suggestions for further distribution of the kits in Haiti. For school attendance, we used a participatory ranking exercise and participants ranked, in descending order, reasons for absenteeism (i.e., inability to pay school fees, household chores, lack of feminine hygiene supplies).

Procedures

For Specific Aim 1, the investigators conducted a 2-day DfG training workshop at the Episcopal University of Haiti in the fall of 2016, using the guidelines provided by DfG International. The workshop included educational material from the DfG Ambassador of Women's Health 101 training modules on anatomy (female/male), puberty, the menstrual cycle, reproduction, sexually transmitted diseases, feminine hygiene, self-defense, and human trafficking. Completion of the DfG Ambassador of Women's Health 101 training modules qualifies a person to do distribution trainings, including teaching and distributing the DfG Distribution Curriculum and Kit Care. We used the DfG Distribution Handbook, which is written in English and French. The workshop materials included a DfG instructional flip chart, a guide on how to provide menstrual education, discussion points, and frequent questions/answers from young women about the reusable hygiene kits. The Distribution Handout provided very short step-by-step directions on how to clean the items in the feminine hygiene kits that can last up to 3 years with proper care. DfG provided specific patterns for each item in the reusable hygiene kit (pads and shields) and specific instructions on how to assemble and sew each item (Figure 1). The reusable hygiene kits consist of one drawstring bag to hold all the contents, eight absorbent trifold pads, two moisture barrier shields, visual instructions, one-gallon size ziploc bag (Figure 1). The last part of the workshop training included a session during which Haitian seamstresses from the nonprofit Helping Haiti Work trained fellow Haitian seamstresses on how to produce the shields and pads. The seamstresses from Helping Haiti Work are an approved provider of the DfG hygiene kits and provided all the kits for this study.

Specific Aim 2 was implemented the week following the completion of the workshop. The DfG reusable hygiene kits were individually distributed to 49 young women enrolled at the Episcopal University of Haiti by a coinvestigator (nursing faculty) who completed the DfG workshop training. The women were each provided verbal instructions on how to use and clean the DfG shields and pads in the hygiene kits. In addition, each kit came with a visual instruction sheet. Each participant was asked to use the hygiene kits for 2 months. At the end of the 2 months, the coinvestigator distributed a survey to each participant to determine their perception of using the DfG hygiene kits.

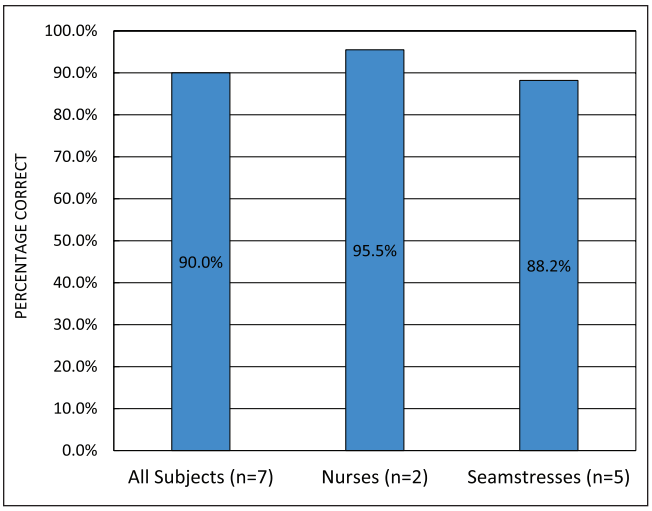

Figure 2. Results of posttest from participants who completed Days for Girls workshop training.

Data Analysis

For Specific Aim 1, we tabulated the correct responses to each test question and overall correct percentage for each workshop participant. For Specific Aim 2, we tabulated the frequency and percentage of responses to each Likert-type scale survey question. We completed a thematic analysis of the open-ended survey responses and recorded the frequency of each response for the rank order question on school absenteeism. All analyses were performed using SPSS Version 22 (International Business Machines, 2013).

Results

DfG Workshop Results

Five Haitian seamstresses (three with physical disabilities) and two nursing faculty from the Episcopal University of Haiti completed the 2-day DfG workshop training in Léogâne, Haiti. It should be noted that the three women with physical disabilities who completed the DfG workshop training are now about to produce and sell the DfG kits providing an ongoing source of income. Workshop participants demonstrated a good understanding of the DfG program with an overall posttest average of 90% (Figure 2). Participants of varying educational levels and understanding of women's health issues did not differ significantly in posttest scores. It should be noted that education provided from two of the DfG Ambassador of Women's Health 101 modules led to lengthy discussion among workshop participants. These included the modules on "women's self-defense" and "human trafficking." Workshop participants noted these subjects are particularly sensitive among women in Haiti and somewhat challenging to discuss.

Perception of Using the DfG Hygiene Kits

Forty-four young women used the DfG hygiene kits for 2 months and participated in the postuse survey for an 89.8% completion and survey response rate. Five women enrolled in the study did not use the DfG kits for 2 months, therefore, did not complete the postuse survey. The young women who used the DfG hygiene kits for 2 months overwhelming agreed that there is a need for feminine hygiene programs in Haiti (97.1% strongly agreed/agreed) and that the DfG program was easy to understand and use (92.9% and 86.4% strongly agreed/agreed, respectively). The participants agreed that the DfG reusable products could be cleaned to prevent infections (92.1% strongly agreed/agreed). Of the seven Likert-type scale questions, only one question had responses below 80% agreement; a question regarding ease of cleaning the kits (78.5% strongly agreed/agreed; Table 1).

Responses From Open-Ended Survey Questions

Several themes emerged from an analysis of the open-ended questions that centered on (a) the benefits of the kits, (b) the challenges of using the kits, and (c) recommendations for the next steps of the DfG program in Haiti. The specific themes for each of these sections is provided in Table 2. Many of the participants noted the benefits of the kits and felt the DfG products were easy to use and absorbent. One participant noted, "I liked the kit. It was easy to use and can prevent infections, I have had problems with other pads." The participants liked the design of the DfG kit and items (shield and pads) and felt the DfG program was economical and good for the environment. "I loved the way the kit was presented (bag, colorful liners). I like everything in kit the liners and the shields," reported one participant. Some potential challenges to using the kits were also reported, including the need for more products (shields and liners) in each kit to reduce the need to clean the products each day of use. One participated stated, "Need more pads, if there is no sun to dry the liners, I cannot reuse the liners. I suggest adding more liners." In addition, a few participants commented on the size of the pads and that the size made some daily activities, such as walking, uncomfortable. "The liner did not always stay secure in underwear. I had difficulty doing some activities like walking" reported one participant. Several participants had suggestions for the next steps of the program in Haiti. It was strongly suggested that this program continue in Haiti with an emphasis on distribution of the kits in the more rural areas of Haiti (i.e., mountains). One participant noted, "This was a good idea. You must give the kit to all parts of Haiti, especially in the mountains and cities" (Table 2).

School Absenteeism

Information on absenteeism collected after the use of the DfG kits revealed several reasons for days missed from

Table 1. Results of Likert-Type Scale Questions to Participants Using the Days for Girls Kits.

Survey questions	Participant responses (%)		
	Strongly agree/ agree	Neutral	Disagree/strongly disagree
There is a need for feminine hygiene programs in Haiti	97.1	2.3	0
The Days for Girls feminine hygiene program was easy to understand	92.9	2.3	2.3
The Days for Girls feminine hygiene kits were easy to use during my monthly menstrual cycle	86.4	2.3	11.2
The Days for Girls feminine hygiene kits were easy to clean	79.5	6.8	13.7
I was able to use the Days for Girls kit and pads during my monthly menstrual cycle	88.7	6.8	4.5
I was able to participant in all routine and daily activities while using the Days for Girls hygiene kits	84.1	4.5	11.4
I was able to clean the reusable pads/liners to prevent infection	92.1	6.8	4.5

Table 2. Results of Responses to Open-Ended Questions From Participants Using Days for Girls Kits.

Themes	Participant responses
Benefits of Days for Girls program	
Easy to use and absorbent	"I liked the kit. It was easy to use and can prevent infections, I have had problems with other pads"
	"I liked the use of the kit. It was easy to use at night"
	"The pads have the capacity to hold and are absorbent and comfortable. Easy to clean"
Design of kit	"I loved the way the kit was presented (bag, colorful pads). I like everything in kit the pads and the shields"
	"I loved the color of the pads"
	"I liked the presentation of the kit, the pads are like absorbent towels"
Economical and good for environment	"The kit is economical and a good environmental agent for Haiti"
	"The kit is comfortable and economical and advantage for the environment (decrease waste materials with reusable product)"
Challenges of Days for Girls program	
Cleaning liner or shields	"Sometimes difficult to clean properly and dry in time to reuse"
Number of products in kit	"Need more pads, if there is no sun to dry the pads, I cannot reuse the pads. I suggest adding more pads"
	"Need to use several pads for heavy flow. Need more pads and shields in kit"
	"I like the kit, but need more pads in kit for heavy flow days"
Daily activities	"The liner did not always stay secure in underwear. I had difficulty doing some activities like walking"
	"The pads are too big and sometimes uncomfortable when walking"
Suggestions for next steps of program	
Distribute kits to women in the rural areas	"This is a good thing. It will help many girls. Sometimes girls don't have money to buy disposable pads, this will help them"
	"You must give the kit to all parts of Haiti, especially in the mountains and cities."
	"I suggest giving out more kits to more women. I congratulate for project in Haiti. I want this program to grow into the mountains in Haiti (rural areas)"
Add additional material to kits	"You should continue with this program but should put in more materials in the kits (pads and shields)"
	"The kits should have more detergent. Maybe have the same number of pads and shields in each kit"
Adaptations to shield	"I like the pads and shields in the kits. I suggest putting something (attachment) that help keeps in shield in place in the underwear"
	"Would like an additional attachment to keep secure in underwear"

school. The women reported missing zero up to 10 days of school during a 1-year academic period. The average number of days missed for all participants was 4.73 days. The most frequently ranked reason for absenteeism was illness (42.4%)

Table 3. Results of Rank Order Questions About Potential Reasons for Absence From School.

Reason for absence	Percentage of participants ranking as most important reason (top reason)
Inability to pay school feeds	12.1%
Need to stay home to complete household chores	2.2%
Lack of feminine hygiene products	21.4%
Illness	42.4%
Family Emergency	21.9%

followed by family emergency (21.9%). The lack of access to feminine hygiene products was ranked closely with family emergency though at 21.4% and inability to pay school fees (12.1%) and need to stay home to complete household chores (2.2%) was a far lower percentage of responses in the ranking order (Table 3).

Discussion

The DfG Ambassador of Women's Health program was successfully implemented during a 2-day workshop to train women in Haiti about reproductive health and how to make and distribute the DfG feminine hygiene kits. The DfG program and workshop materials can be used with women of various educational backgrounds and was easily understood using this systematic training approach. Participants who completed the workshop are now qualified to produce and distribute the DfG feminine hygiene kits using the educational materials provided during the training. This allows for sustainability of the program as in-country providers are now considered ambassadors of the DfG program in Haiti. The DfG program could address important reproductive health issues in Haiti and provide cost-effective, reusable personal hygiene supplies, which may decrease waste accumulated from traditional feminine hygiene products. Effective isolation and removal of human waste is critical to protecting public health, particularly in dense urban environments in Haiti. In fact, current health policies for sanitation and water treatment in Haiti are focused on effective trash removal of human waste and construction of private latrines to facilitate sustainable and long-term solution to waste management (Piarroux & Frerichs, 2015; William et al., 2015).

In addition to the potential public health impact, the young women in our study overwhelmingly perceived the DfG reusable hygiene kits as beneficial, easy to use, and economical. In fact, many participants of our study strongly encouraged the distribution of the DfG kits in more rural areas of Haiti where it is difficult to find and buy feminine hygiene supplies. The results of our study are similar to those found in research on the use of reusable hygiene in low-resource countries (i.e., Uganda, Ghana, Guyana) where women using the products felt a sense of empowerment with the new found ability to manage monthly menstruation. These studies demonstrated that the long-term benefits of reusable hygiene kits could be improvements in girls' attendance in secondary school and reduction of the social stigma from unsanitary and unhealthy feminine hygiene habits (Jewitt & Ryley, 2014; Malusu & Zani, 2014).

It remains unclear from the results of our survey if a lack of access to feminine hygiene products had an impact on school attendance and absenteeism. Although this reason was not ranked number one by our participants, other published studies that investigated women's menstruation and school attendance in low-income countries note that the term "sickness" or "illness" not only covers a wide range of ailments including malaria and gut infections, but is also used as a euphemism for menstrual cramps and menstruation issues more generally (Jewitt & Ryley, 2014; Mason et al., 2013; McMahon et al., 2011). This could also be true for our participants who ranked "illness" as the number one reason for missing school. These studies have also noted that women who live in poverty lack access to adequate feminine hygiene and fear the embarrassment of visible menstrual leaks when away from home. The DfG program and use of absorbent and dependable products has the potential to reshape the daily experiences of women in low-resource countries by reducing any restrictions to stay at home during menstruation.

There may be some cultural barriers to use of the established DfG program for women's health and menstrual education in Haiti. Although most young women in our study liked the colorful design of the pads and shields, a few noted that using solid white materials would be more traditional for Haiti as many items are washed using bleach. In addition, some expressed concern about the appearance of going "back to their mother's time" to use of reusable feminine pad versus the more modern disposable pads. Finally, it was noted from some participants that women in Haiti may have a "phobia" for touching blood products, which may be a barrier to cleaning of the reusable pads.

During the workshop, some of the topics discussed in the DfG Ambassador of Women's Health 101 training modules initiated lengthy conversations related to what the women considered sensitive issues for Haiti including the modules on "women's self-defense" and "human trafficking." Recent studies have found high rates of violence and abuse after the earthquake primarily perpetrated by boyfriends or husbands. In fact, Haitian women reported heightened vulnerability to intimate partner violence due to increased poverty and reduced community networks. The majority of abused women did not report personal or community tolerance for violence and abuse, but acknowledged a community context of limited involvement (Campbell et al., 2016; Logie & Daniel, 2016). On the subject of "human trafficking," there are a large number of vulnerable children in Haiti and the country's particular historical context has led to a unique phenomenon known as the *restavèk* system. An estimated

300,000 Haitian children are *restavèks*, living as unpaid domestic servants (Haydocy, Yotebieng, & Norris, 2015; Leeds et al., 2010). Further research is needed to explore the potential barriers of using the DfG Ambassador of Women's Health 101 training module and modifications needed to assure cultural sensitivity to the current social issues in Haiti. In addition, overall acceptance of the DfG menstrual hygiene kit should be explored to address the participants' suggestions to increase the number of items in each kit and potential modification to the shield and pad design to ensure comfortable fit.

This study was intended to determine the perceived benefits of the DfG program for women in Haiti. Limitations to this study include the use of only a postsurvey design that does not allow for an analysis of a change in the participant's responses before and after using the DfG hygiene kits. Therefore, it is difficult to determine the impact of the DfG on the feminine hygiene practices of the participants. Future long-term studies should consider a pre- and postsurvey design to determine the overall impact of the DfG hygiene program in Haiti. In addition, future studies should explore the use of the DfG Ambassador of Women's Health 101 training modules related to human trafficking and domestic violence in Haiti. It would be important to consider how to adapt and modify the content of these modules to assure the information is culturally relevant and sensitive to the Haitian society.

Conclusion

The "Occupational Therapy Practice Framework" (2014) states that it is within the scope of OT to work with communities and populations as well as individuals. Occupational therapists emphasize cultural competency and tailoring intervention to the individual or the specific population. This includes promoting participation in daily life activities and identifying barriers to participation. This article contributes to the further improvement and understanding of occupation, participation, and health for women in low-income countries. Women's health issues and lack of access to feminine hygiene products could present as barriers to participation in life activities. Results of this study will (a) inform further distribution of the DfG kits in rural Haiti and other low-resource countries, (b) inform modification of the DfG program with appropriate cultural considerations, and (c) provide strong support for a larger funded trial of the DfG program to include distribution of the postpartum hygiene kits.

Declaration of Conflicting Interests

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