

A playbox intervention in health facility waiting rooms in Mozambique: Improving caregivers' knowledge, skills and communication with health professionals

Svetlana Karuskina-Drivdale, Regional Early Childhood Development Advisor, PATH, Mozambique

Nami Kawakyu, Consultant, Kawakyu Consulting / Faculty, Lake Washington Institute of Technology, USA

Félix Mulhanga, Faculty, Pedagogic University, Mozambique

Toys and play can be a way to improve the experience of health visits for children and their caregivers, and so increase return to care for routine pediatric health services. In collaboration with Mozambique's Ministry of Health and community activists, PATH designed and piloted a low-cost playbox intervention in ten health facilities in Maputo Province beginning in November 2014. Subsequent interviews and focus groups with caregivers, community activists, and clinicians revealed a positive change in children and caregivers' waiting experiences, leading to increased motivation to return to the health facility. Caregivers reported an increase in knowledge of developmental milestones, of integrating play into daily life, and making toys. This increase in knowledge empowered them to be more engaged during consultations to discuss developmental concerns. The playbox intervention appears to be a promising family-centered approach in low-income settings to improve child and caregiver satisfaction with and adherence to health services, and to increase caregiver knowledge and skills related to child development.

Keywords: child development, play, toys, health facility, waiting areas, client satisfaction, return to services, Mozambique

The benefits of interventions involving play in health facilities (HFs) are multifold. Toys and play in waiting areas improve general waiting experiences for children and their caregivers (Turner et al., 2009; da Silva et al., 2007), contributing to positive wait time perceptions, which is a strong predictor for overall patient satisfaction (Thompson et al., 1996). Furthermore, studies have also shown that use of toys and play can reduce anxiety and experience of pain among children awaiting or receiving medical interventions (Aranha & Umarani, 2014; Ghabeli et al., 2014; Vagnoli et al., 2005; Vessey et al., 1994) and prevent the negative behaviors that often manifest due to anxiety about medical procedures (Gorski et al., 2004). This improved perception of waiting and associated increase in patient satisfaction among caregivers and children can be a key strategy in increasing return for services and medication adherence (Dang et al., 2013).

Introducing play in HF waiting rooms has the potential to improve the skills of parents and other caregivers to promote child development through play at home. These skills are especially critical to build in sub-Saharan Africa, where an estimated 60% of children under five are at risk of poor developmental outcomes (Black et al., 2016). While many of the estimated risks come from poverty and poor nutrition, poor developmental outcomes can be mitigated through health-promoting parenting practices such as play, responsive feeding, and attention to signs of delay (Black et al., 2016). According to a recent survey of 200 households in the southern part of Mozambique, less than 30% of caregivers engage in play activities with young children during daily routines at home, and less than half of families have homemade or other toys. Similarly, less than 5% of caregivers are correctly able to mention the ages at which the child should reach certain milestones, for example, seeing, hearing, smiling,

PATH

PATH is a global team of innovators working to accelerate health equity so all people and communities can thrive. The team includes scientists, health professionals, business leaders, engineers, advocates, and experts from dozens of specialties. PATH works in more than 70 countries to find sustainable solutions that improve health and well-being for all. (<https://www.path.org/about/>)

and talking (PATH & Centro de Investigação em Saúde de Manhica, 2015, unpublished survey).

In the African context, overall low access to, and poor quality of health services within an environment of higher burden of HIV and other diseases, are associated with low satisfaction with services and return to follow-up (Dansereau et al., 2015; Kalembo & Zgambo, 2012). Reasons for dropping out of treatment include lack of trust and positive communication with providers and long hours in HF waiting areas before receiving care (Geelhoed et al., 2013; Groh et al., 2011).

Accordingly, the Mozambique Ministry of Health 2015-2017 National Plan for Improving Pediatric HIV Treatment added waiting room play areas as a strategy to increase adherence to pediatric Anti-Retroviral Therapy (ART) (República de Moçambique, 2016). PATH—in collaboration with Mozambique's Ministry of Health and with support of community-based organizations—designed and piloted a low-cost playbox intervention in ten HFs in Maputo Province beginning November 2014.

THE PLAYBOX INTERVENTION

A playbox is a decorated box positioned in the HF waiting room and filled with age-appropriate, homemade or low-cost picture books and children's toys for children 0 to 5 years of age. Most of the toys are made by community activists from easily available recycled materials. The playbox model was selected as an alternative to the more conventional strategy of playrooms or playgrounds because of its low cost and portability, and following consultations with caregivers who were concerned about losing their place in line if they followed their child to a separate play area. The playbox occupies little space and can be used in narrow HF waiting corridors or easily moved to a new location to follow the flow of patients.

While caregivers and children await their consultations, community activists explain the importance of age-appropriate play and familiarize caregivers with developmental milestones by means of simple posters. They then introduce caregivers and children to the playbox and guide them to select handmade toys after washing their hands. As caregivers engage with their children, the activists individually counsel those who show difficulty interacting with their children. On selected days, activists also teach caregivers how to make toys from recycled materials. HFs offer playbox activities a few days per week during morning hours when most clients come for child health services.

A typical HF playbox includes handmade and low-cost toys, books, and safe household objects.

EVALUATION

One year after implementation began, PATH conducted interviews and a focus group with caregivers, clinicians, and community activists to assess the benefits of the playbox intervention and its limitations, and to identify recommendations for ways forward to inform successful future implementation

and scale up to other parts of the country.

The playbox intervention in the HF waiting rooms was well received by caregivers and clinicians with several benefits identified.

A) IMPROVED WAITING EXPERIENCE AND INCREASED RETURN FOR FOLLOW-UP

A common theme across interviews was how the playboxes improved the waiting experience for the child and caregiver, and that this improved experience motivated both the child and caregiver to return to the HF.

Nearly all caregivers reported that children were happier and cried less in the waiting rooms with a playbox and the intervention also appeared to improve children's waiting experience by encouraging them to play with other children. Because of the improved experience for the child, the waiting experience also improved for the caregiver. As a clinician from one of the HFs observed:

The caregivers no longer feel pressured by children who used to spend almost all their time crying... [They] now have time to talk to each other and exchange experiences on various issues of life while waiting for the [consultation time].

Another caregiver of seven children and six grandchildren commented on the impact of the playbox:

It affected the consultations a lot. Now we laugh, we learn love, we adults learn while we are here. On the day that the [play]box does not come out the children ask for it.

Furthermore, clinicians and volunteers noticed that there was an increase in the number of caregivers returning for consultations. One caregiver summarized:

[The playbox] motivated my coming to the Health Center since [here] I learn how to play with a child and children also have the opportunity to use toys.

B) INCREASED CAREGIVER AWARENESS AND KNOWLEDGE

The playbox intervention also reportedly increased caregiver awareness and knowledge of developmental milestones, how to integrate play into daily life, and making toys. One caregiver of three children stated:

[The playbox] affected [me], because when it started we learned several things about the child's development ... what the child is capable of doing at a certain [stage]... I can understand better the child's development.

Caregivers also reported learning the importance of play and how they could integrate play with children into their daily activities:

[The playbox] is good because it teaches me how to play with the children... the children become smarter with this box It's good because children gain creativity ...I also learn that talking and playing with the child when bathing him is very important for the growth and development of the child... so that the child can develop quickly.

Additionally, caregivers repeatedly

expressed their enthusiasm for being able to offer toys to their children using easily available materials. For example, one said:

It is good because there are mothers who do not have 15 meticals [the basic monetary unit of Mozambique] to buy a toy for their children. Here we learn that the mother can come home and use a bottle and put some stones in [to make a toy].

C) INCREASED STIMULATION OF CHILDREN BY THE CAREGIVER

The increase in knowledge about making and using toys and integrating play into daily activities appeared to increase stimulation of children by their caregivers. Clinicians and community activists described a noticeable positive change in the interaction between caregivers and children in the waiting areas, as observed here by a nurse:

[Development] was a part of [child] health that was forgotten. Now mothers play with children. Before the playbox, they would just put their children on the back. Now they play and take every opportunity to do so... There was a big change. Sometimes I ask the mothers jokingly – have you come to weigh the child or to play with your child?

Further research will be needed to confirm whether caregiver practices are changing in the home setting as well.

D) INCREASED CAREGIVER ENGAGEMENT DURING HF CONSULTATIONS

Increased knowledge of developmental milestones helped caregivers to be more aware of their children's developmental problems and empowered them to be more engaged during the HF consultations as one clinician noted:

From the moment you explain to a mother about her child's development, she begins to say that my son has this or that problem, and this helps the Health Center itself.

E) INCREASED DETECTION OF DEVELOPMENTAL PROBLEMS

Clinicians reflected that increased knowledge, awareness, and engagement on the part of the caregiver helped clinicians to detect developmental problems more effectively:

The playbox helps us as nurses, because we can quickly see that the child does not grow well. For example, when I was working at Health Center A, I had a case where a caregiver came to me after the talk and told that her child did not show the milestones mentioned in the talk... I confirmed [the delay] and referred the child to a specialist.

Further investigation is needed to see whether there has been a quantifiable change in the detection of cases of developmental delays with the introduction of the playbox intervention.

LIMITATIONS AND RECOMMENDATIONS

A) MAINTAINING THE PLAYBOX INVENTORY

Very few limitations of the playbox intervention were raised by caregivers, clinicians, and community activists. The main issue expressed by

community activists was related to maintaining the playbox inventory. Some caregivers and children took toys home with them, which decreased the amount of toys in the playbox. To address this issue, activists brought recycled materials to the HF to make more toys. At one location, caregivers made toys and brought them to the HF to add to the playbox.

B) SUSTAINABILITY

PATH has been providing financial and technical assistance to community activists to implement the playbox intervention, and is exploring ideas for adapting the intervention to be more cost efficient and sustainable. Clinicians, non-clinical HF staff (e.g. cleaners) and caregivers themselves have been proposed as possible actors who could support the playbox intervention. For example, clinicians could add the topics of child development and stimulation to their regular morning talks. In turn, experienced caregivers could act as peer educators, coaching other caregivers in play activities. Additionally or alternatively, some clinicians could have a playbox in their consultation room as a way to conduct counseling sessions and to ensure that toys are not taken away.

IMPROVED KNOWLEDGE, SKILLS AND COMMUNICATION

The interviews conducted by PATH suggest that play interventions in HF waiting areas in Mozambique led to a perception of reduced waiting time and increased client satisfaction. It was often the children themselves who motivated caregivers to return to the HF, as they were eager to play with the toys, especially in the absence of toys at home. The play intervention also permitted caregivers to interact among themselves. In the context of long waiting hours and health services perceived as unfriendly, achieving such improvement in caregiver experiences and motivation to return, is a priority for the Mozambique Ministry of Health. Additionally, the playbox seems to be a promising strategy to impact caregiver parenting practices, an essential element in improving child development outcomes (Black et al., 2016; Treyvaud et al., 2012).

The play intervention also improved communication between providers and caregivers. In the context of hierarchical relationships within health services in Mozambique, where providers are seen as authorities and clients are not expected to ask questions, educating caregivers in child development empowered them to be a more active participant in their child's health care. The playbox intervention, through play and increased caregiver knowledge and involvement, was a facilitator in identifying children with developmental delays.

It is important to note that the benefits of the playbox were enhanced by the educational component of the intervention. In recognition of the importance of the educational sessions provided by the community activists, while understanding the restraints of resource-limited settings like Mozambique, PATH is examining whether the

education sessions can be delivered by non-clinical HF staff such as cleaners, counselors, or peer educators who are supervised by a HF clinician. This approach would be a more sustainable model but would require the intervention to be aligned with the realities of these non-clinical HF staff (e.g., shorter hours). If a leaner intervention can achieve the same benefits, it will have a higher probability of being adopted nationally.

FUTURE DEVELOPMENTS

As of June 2016, PATH began implementing the playbox intervention in six new districts in Maputo Province. As the intervention is refined in these districts, ongoing evaluation will be conducted to generate information about its feasibility and impact and offer the Ministry of Health the evidence and know-how for scale-up.

KEY MESSAGES

The playbox intervention with low-cost handmade toys and educational sessions in health facility waiting rooms:

- is a feasible alternative to playrooms or playgrounds in resource-limited settings;
- is a promising strategy to improve caregiver and child satisfaction and increase motivation to return for basic child health services;
- can increase caregiver knowledge of developmental delays and stimulate practices critical for child development in the early years.

ACKNOWLEDGMENTS

PATH undertook this assessment with funding from the BHP Billiton Sustainable Communities and Conrad N. Hilton Foundation.

Sincere appreciation goes to the Mozambique Ministry of Health, Provincial Health Directorate of Maputo Province, Boane District Health, Gender, Children and Social Action services, and community-based organizations Fundação Encontro, CMA and Cruz Vermelha de Moçambique for their continued support of and collaboration on PATH's early childhood development work in Maputo Province.

Credit and gratitude go to the caregivers, clinicians, and community-based organization activists for taking part in interviews and focus group discussions for this evaluation and for their willingness to share information and opinions freely.

REFERENCES

Aranha, P.R., Umarani, J. (2014) Diversion therapy for infants. *The Nursing Journal of India*, 105, 5-7.

Black, M.M., Walker, S., Fernald, L.C.H., Andersen, C.T., DiGirolamo, A.M. et al. (2016) Early childhood development coming of age: Science through the life course. *Lancet*, 389,77-90.

da Silva Pedro, I.C., Nascimento, L.C., Poleti, L.C., Garcia de Lima, R.A., Falleiros de Mello, D. et al. (2007) Playing in the waiting room of an infant outpatient clinic from the perspective of children and their companions. *Revista Latino-Americana de Enfermagem*, 15, 290-297.

Dang, B.N., Westbrook, R.A., Black, W.C., Rodriguez-Barradas, M.C., Giordano, T.P. (2013) Examining the link between patient satisfaction and adherence to HIV care: A structural equation model. *PLoS One*, 8, e54729.

Dansereau, E., Masiye, F., Gakidou, E., Masters, S.H., Burstein, R. et al. (2015) Patient satisfaction and perceived quality of care: Evidence from a cross-sectional national exit survey of HIV and non-HIV service users in Zambia. *BMJ Open*, 5: e009700.

Geelhoed, D., Decroo, T., Dezembro, S., Matias, H., Lessitala, F. et al. (2013) Utilization of and barriers to HIV and MCH services among community ART group members and their families in Tete, Mozambique. *AIDS Research and Treatment*, 2013. Available at: <https://www.hindawi.com/journals/art/2013/937456/abs/> <accessed 19 January, 2019>

Ghabeli, F., Moheb, N., Hosseini Nasab, S.D. (2014) Effect of toys and preoperative visit on reducing children's anxiety and their parents before surgery and satisfaction with the treatment process. *Journal of Caring Sciences*, 3, 21-28.

Gorski, J.A., Slifer, K.J., Kelly-Suttka, J., Lowery, K. (2004) Behavioral interventions for pediatric patients' acute pain and anxiety: Improving health regimen compliance and outcome. *Children's Health Care*, 33, 1-20.

Groh, K., Audet, C.M., Baptista, A., Sidat, M., Vergara, A. et al. (2011) Barriers to antiretroviral therapy adherence in rural Mozambique. *BMC Public Health*, 11, 650.

Kalembo, F.W., Zgambo, M. (2012) Loss to follow up: A major challenge to successful implementation of prevention of mother-to-child transmission of HIV-1 programs in sub-Saharan Africa. *International Scholarly Research Network AIDS*, 2012.

República de Moçambique National Council for Combating AIDS (2016) Global AIDS Response Progress Report. Mozambique. Available at: http://www.unaids.org/sites/default/files/country/documents/MOZ_narrative_report_2016.pdf <accessed 29 January, 2019>

Thompson, D.A., Yarnold, P.R., Williams, D.R., Adams, S.L. (1996) Effects of actual waiting time, perceived waiting time, information delivery, and expressive quality of patient satisfaction in the emergency department. *Annals of Emergency Medicine*, 28, 657-665. 6

Treyvaud, K., Inder, T.E., Lee, K.J., Northam, E.A., Doyle, L.W. (2012) Can the home environment promote resilience for children born very preterm in the context of social and medical risk? *Journal of Experimental Child Psychology*, 112, 326-337.

Turner, J., Fralic, J., Newman-Bennet, K., Skinner, L. (2009) Everybody needs a break! Responses to a playgarden survey. *Pediatric Nursing*, 35, 27-34.

Vagnoli, L., Caprilli, S., Robiglio, A., Messeri, A. (2005) Clown doctors as a treatment for preoperative anxiety in children: A randomized, prospective study. *Pediatrics*, 116, e563-567.

Vessey, J. A., Carlson, K. L., McGill, J. (1994) Use of distraction with children during an acute pain experience. *Nursing Research*, 43, 369-372.