



Hollman Facilitations: A user-friendly tool of supporting children with visual impairment and their families in daily life



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ABSTRACT

The Robert Hollman Foundation (RHF) designed “Hollman Facilitations” (HF), a user-friendly way of supporting children with visual impairment (VI) and their families on a daily basis. This tool consists of specifically designed pictures on simple A4 sheets, which highlight with images and captions the key aspects of these children’s everyday lives. Professionals can easily modify Hollman Facilitations to customize them to the unique developmental needs of every single child with VI and to their individualized strengths and weaknesses. This type of support acts as a reminder, to help families keep in mind what is essential for their children with VI in everyday life. HF are also useful for professionals because they give a clear, at-a-glance overview of the needs of visually impaired children, helping their communication with their families. In order to understand the perceived effectiveness of this tool, a questionnaire was designed and sent to 49 families, asking their opinions and satisfaction levels regarding its clarity, adequacy, usability and usefulness. 36 parents answered reporting overall very high satisfaction levels. A second questionnaire was sent to 29 RHF professionals to collect their opinions regarding HF usability and usefulness and the majority of them was very satisfied of its use in their daily work. This data supports overall this tool, which can be also easily replicated and also potentially used in other settings, beyond the field of visual impairment.

- HF support children with VI and their families substantially and works as a reminder of what the professionals found in their consultations, to be fundamental for the children to promote the use of their functional vision and their strengths and to consequently improve the quality of their daily lives
- HF favour a better communication between health professionals and families of children with VI, sharing therapeutic indications through the adoption of a customized, user-friendly, everyday tool by integrating pictures and text with oral communication
- HF help professionals to identify strategies that best promote the overall development of children with visual impairment and to express them in an understandable way

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Specifications table

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Method details

The use of appropriate strategies and facilities in daily life can favour the neurodevelopment of children with visual impairment (VI) [1,2]. Communication between health professionals and families, at the end of a clinical consultancy, is often challenging because of an overwhelming amount of important, new and often difficult-to-deal-with information, which is also often difficult to remember and apply to the different contexts of everyday life, according to literature [3] and the empirical long-term experience of Robert Hollman Foundation (RHF). Effective communication can become even more difficult in the presence of linguistic, cultural and social barriers [4]. A real risk is that therapeutic strategies and indications, shared orally during health communication or written in professionals' reports, can not be put into practice in the daily life of the children because they are unclear, poorly remembered or understood by the families [4].

According to the Family-Centred Care approach, which is a way of caring for children and their families within health services where all the family members are recognized as care recipients, the family is the main promoter of their child's development [5]. Terminology used by the professionals should be accessible both to the family and their child, whenever possible, and the amount of information supplied should be easy to process by the family at any given moment [4].

Different tools and methods are used to help parents recall the highlights of counseling [6,7] and to help children's communication with health professionals [3,8]. Information leaflets are given to families, however these often appear to be not specific for the needs of each individual child. In this framework, Hollman Facilitations (HF) have been specifically designed by Robert Hollman Foundation's professionals (psychologists, rehabilitation therapists, educators, orthoptists) as part of its model of care [9,10], with these aims:

- to improve communication between health professionals and families, integrating the oral communication with pictures and worded captions to make it more understandable;
- to give families a simple and user-friendly tool which helps them to daily remember the important messages and therapeutic indications communicated orally;
- to increase the adherence to the given indications;
- to disseminate what is important for that child with (VI) to all the contacts and caregivers in their everyday life (parents, relatives, teachers, instructors...)

The HF were created thirteen years ago by RHF professionals and they are continually updated by an RHF illustrator consultant at the suggestion of RHF professionals in a dynamic, interactive and interdisciplinary process to make them more suitable for a wider range of children and families. They reflect the daily life of the child with VI, making suggestions with respect to the best postures to improve visual functions and relational exchanges, with respect to the characteristics of toys and how they are proposed to promote visual attention, and with respect to the arrangement of the daily environment to support functional interaction between the child and the world around them. In clinical practice, RHF professionals (therapists, educators, orthoptists, psychologists, etc.) assess the child's functional vision during consultations dedicating personalized time. The reflective practice of multidisciplinary teams leads to defining the main strengths and weaknesses of the child with VI, relating them to their daily life and the perceptions of their family. Based on what has emerged, the RHF team defines and creates a tailored HF sheet that takes into account the main daily needs of the child and their family. It is later shared and presented to the family to support communication during the time of feedback at the end of clinical consultancy.

In order to reach these aims, HF share some structural and procedural characteristics:

Structural characteristics include:

1. A *simple structure* (Fig. 1), with 4 or 6 pictures per sheet in order to be clearly understood. Each picture is surrounded by a defined border, which helps children and families to focus on one picture at a time. Professionals explain each image proceeding from left to right and top to bottom, following the same visual exploratory strategy adopted while reading. At home, HF may be hung in a strategic place to be seen daily and works as a useful reminder.
2. *Captivating and simplified pictures* (Fig. 2), which may intrigue the child and are easy to perceive and understand. These are composed of bright colors, clear figure-background relationships and outlines, easily perceivable also by children with visual impairment. Pictures represent daily routine strategies for home or school contexts in order to directly focus on the child's needs and to help families to apply them in their everyday life (home, school, sport associations etc.). We believe that HF can even overcome language and cultural barriers with families from different countries and can proactively involve children in their own care paths.
3. *Simple captions* (Fig. 3); they use clear, non-technical language for better comprehension and memorization, enlarged fonts and characters so that they can be easily read also by children with visual impairment. Captions are translated into their native



FACILITATIONS FOR YOUR CHILD



Give the child appropriate time to explore and recognize objects



Protect the child from the direct sunlight with glasses and hat



Mediate contact with new toys, gradually involving them in the activities



Helping the child explore the outside world with all the senses

Illustrations by Laura Michieletto

Fig. 1. Hollman Facilitations sheet layout.

languages for foreign families and they guide comprehension of the pictures' content and promote the HF application into children's daily lives.

Procedural characteristics:

1. *Customization of pictures* by the designer according to the specific needs of every single child and their family.
2. *Customization of captions* by professionals according to the specific needs of every single child and their family.

The design of tailor-made HF for different stages of the child's development helps the professionals to understand how their specific needs, strengths and weaknesses have changed over time.

A specifically designed, user-friendly software, designed by a RHF's IT technician, makes the creation of HF timesaving, enabling digital sheets to be stored in a database and easily modified later as required.

Professionals search and identify appropriate pictures from a database and select the corresponding caption among those proposed or also modify a caption, if necessary. In the database, every picture is linked to specific keywords, which speeds up the search. Keywords are used only to direct the search in the database and do not appear in the final sheet.

The database consists of five tables: three are static because the software does not enter data on them and contain the repository of images and texts and their association, while the other two are dynamic because they include data entered by professionals.

Static tables are described as follows:

- *facilitations_images*: is a repository containing all images with their texts and keywords;
- *facilitations_texts*: contains the list of all texts;
- *facilitations_images_texts*: contains the links between images and texts.

Dynamic tables are:

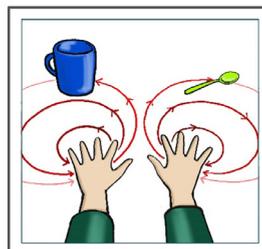
- *facilitations*: includes all the HF sheets created by professionals;
- *facilitations_slots*: contains the individual slots on each sheet. Each slot contains data about its virtual location on the sheet, the Uniform Resource Locator (URL) of the selected picture and the text.



Fig. 2. An example of an HF picture.



**FACILITATIONS FOR
CHILD NAME**



MOVE YOUR HAND IN A CIRCULAR MOTION TO
FIND OBJECTS ON THE TABLE



USE ALL YOUR SENSES TO EXPLORE THE
OBJECTS

Illustrations by Laura Micheletto

Fig. 3. An example of enlarged characters with expanded spacing between words.

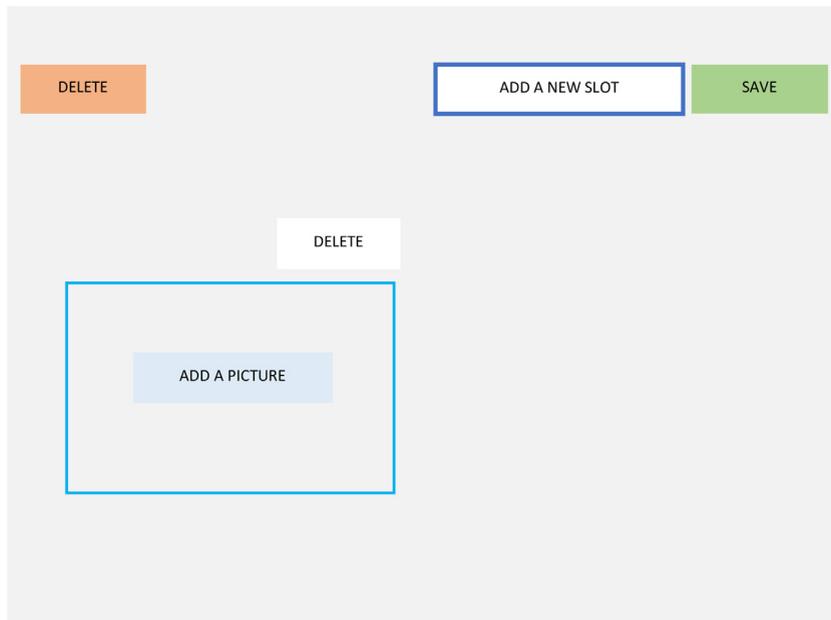


Fig. 4. Select the slot on the digital sheet.

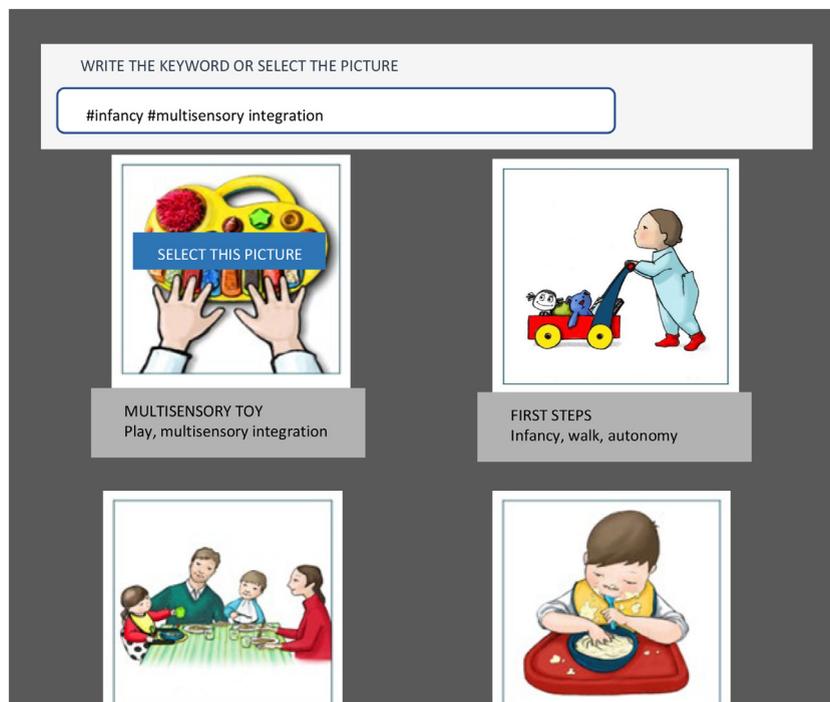


Fig. 5. Select the image from a pictures' database.

HF are created in five simple steps:

- Select the slot on the digital sheet to insert a picture (Fig. 4)
- Choose the picture from a database, by scrolling or using keywords to search (Fig. 5)
- Select the appropriate caption or modify it as required (Fig. 6)
- Continue inserting other images into the sheet adding new slots (Fig. 7)
- Save and download the Word document and print the sheet (Fig. 8)

CHOOSE THE CAPTION

SELECT ONE OF THE PRE-FILLED TEXTS OR INSERT A CUSTOM ONE

Using bright materials allows the child to perceive and learn more about the environment around him

USE THE TEXT

INSERT A TEXT

DELETE SAVE

Fig. 6. Choose the caption.

SAVE



ADD A PICTURE

Using bright materials allows the child to perceive and learn more about the environment around him

Fig. 7. Insert other pictures.

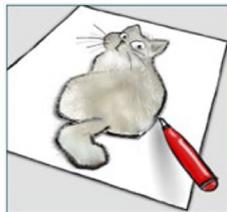
FACILITATIONS FOR YOUR CHILD



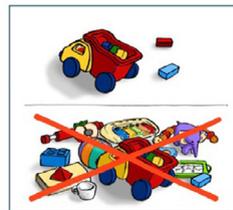
Using bright materials allows the child to perceive and learn more about the environment around him



Propose multisensory materials that favor the integration of information from multiple sensory channels



Using multisensory materials in drawing activities can support the child to understand abstract representations



Using a few toys at a time helps the child to find the object he is looking for more easily

Illustrations by Laura Michieletto

Fig. 8. Save and download the Word file.

Table 1

Results in percentage from the administration of the HF questionnaire to the families (supplementary file1).

	%	Very much	Much	Enough	Little	Very little	Not at all
q1	67	30	0	3	0	0	
q2	72	25	3	0	0	0	
q3	61	28	8	0	3	0	
q4	37	40	23	0	0	0	
q5	28	44	25	0	0	3	

HF are usually shared with families at the end of clinical consultancies and parents can take them home and give them to all the people who care for their child (teachers, therapists, babysitters, relatives etc.). Thanks to the dual format of HF, both digital and printable, facilitations can be shared with caregivers immediately or also sent by mail.

The pilot study

In a pilot project, conducted over a twelve-month period, RHF professionals used HF during interdisciplinary consultations with 49 children and their families. 61% of the families had recently joined this programme and were neophytes with HF while 39% of the families were already familiar with this communication approach because they had attended this programme for a number of years. The children, from birth to 14 years, had a diagnosis of visual impairment, with or without other associated disabilities.

A questionnaire was created to collect feedback from families in order to understand their satisfaction with this new tool and the use they had made of it in their everyday lives. The questionnaire was composed of six questions (q1–q6), of which five (q1–q5) on a 6-point Likert scale; in addition, an open space was left to add comments and suggestions (Supplementary file 1).

The questionnaire was sent by email, using the web application REDCap, two months after the consultation to give the family the time to try HF at home and in the child’s daily routine. Complete anonymity was guaranteed in the questionnaires sent to the families. 36 families completed and returned them to the Foundation. Parents reported 97% satisfaction (q1), of which 67% with the maximum score. 97% of the parents also wrote that HF are clear (q2), 89% adequate (q3), 77% user-friendly (q4), 72% helpful for their children (q5) (Table 1). Only one parent reported that HF were not helpful for their child (3%). 89% of the parents answered

Table 2

Results in percentage from the administration of the questionnaire regarding the usability of HF (supplementary file 2).

	%	Very much	Much	Enough	Little	Not at all
Q2	35	55	10	0	0	
Q3	17	55	28	0	0	
Q4	14	62	21	3	0	
Q5	17	52	31	0	0	
Q6	21	52	24	3	0	

in a “yes/no” question (q6) that they shared HF with other people belonging to the children daily support network of which 31% to health services professionals, 25% to school staff, 28% to relatives and babysitters, 6% to sporting and recreational associations.

The usability of the HF was investigated using a questionnaire (see supplementary file 2), which was designed and administered to 29 professionals, who use them in their daily work. The questionnaire was composed of six questions (Q1-Q6), of which five (Q2-Q6), on a 5-point Likert scale; in addition, an open space was let to add comments and suggestions.

The first question Q1 (more than one answer was possible), regarding situations in which the HF were used more, showed that the great majority of the professionals (26/29) responded that they use them with the families, while 11/29 with schools and 6/29 in other situations (students, other professionals etc.). The responses given to the other questions (Table 2) show that overall 90% professionals reported that HF are easily understandable by families (Q2), 72% of them that HF are helpful to support professionals-families communication (Q3), 76% that HF are supportive in reflecting on clinical cases (Q4), 69% that HF drive the focus on the main aspects of clinical cases (Q5) and 73% that HF help to identify better strategies for the child (Q6).

Discussion

These preliminary data on families’ feedback allow us to state that “Hollman Facilitations” are relevant for both families and professionals. HF is an efficient support tool because it helps parents better understand, keep in mind, remember and apply in daily life what is essential for their children’s development. HF make the main issues shared during consultancies more tangible and immediately understandable to families, helping them to contextualize these suggestions and put them into practice in their daily lives. They are also a guiding tool, thanks to the explanatory pictures and respective captions, for parents to help their children express and utilize their full potential in everyday situations. The HF is also a useful tool for health professionals, as it enables and facilitates communication with families and helps them reflect on their clinical practice so that they can identify the best strategies for each child. HF is a tool that can be easily shared within the child’s support network (teachers, health professionals, relatives) who care for the child on a daily basis in order to disseminate suggestions, facilitation, and knowledge in the child’s different life contexts within a holistic view of the child’s needs. HF is also an easily replicable tool; it is located in the Foundation’s personal archive and can be made available and shared upon written request of the interested institution.

Limitations and conclusion

The limitations of this study are mainly due to the small sample size and the high percentage of nonrespondents. The small sample size makes it difficult to apply statistical analysis and generalize the results. In further studies, it will be important to include a larger sample of families. It would also be interesting to include demographic data to perform statistical analysis on the difference in responses according to the child’s age, duration of treatment, familiarity with HF and other variables. As for the high percentage of nonrespondents, this could be related to some technical problems that occurred during the delivery of the questionnaires, which may have discouraged some parents from responding.

In conclusion, HF is a supportive tool for children with visual impairment, their families and their professionals; it can be easily replicated and potentially applied also to contexts other than visual impairment, health and non-health, and to different age groups.

Ethics statements

This project has been approved by the Robert Hollman Foundation Institutional Committee (project RI16/2020). All the parents and professionals involved gave their informed consent.

Acronyms	Descriptions
RHF	Robert Hollman Foundation
HF	Hollman Facilitations
VI	Visual Impairment

Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

CRediT authorship contribution statement

Tiziana Battistin: Conceptualization, Methodology, Writing – original draft, Writing – review & editing, Data curation, Formal analysis, Supervision. **Silvia Trentin:** Conceptualization, Methodology, Investigation, Writing – original draft, Data curation, Formal analysis, Writing – review & editing. **Enrica Polato:** Conceptualization, Methodology, Project administration. **Maria Eleonora Reffo:** Conceptualization, Methodology, Writing – review & editing, Supervision, Project administration, Resources, Funding acquisition.

Data availability

Data will be made available on request.

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Supplementary materials

Supplementary material associated with this article can be found, in the online version, at [doi:10.1016/j.mex.2024.102656](https://doi.org/10.1016/j.mex.2024.102656).

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