

ILLUSTRATION BOOK MEDIA DESIGN DIABETES MELLITUS TYPE 1 IN IKADAR

¹ Ratih Pertiwi, ² Nur Asmara, ³ Tri Wahyudi, ⁴ Yani Iriani

ABSTRACT

Based on data from the Indonesian Pediatric Association (IDAI) there were more than 1000 cases of children with Type 1 Diabetes Mellitus in 2014. Meanwhile, in 2016 there were an additional 112 new patients. The number of children with diabetes has increased over the past five years. The number increases to 500 percent in children aged 0-18 years. Type 1 diabetes itself is a type of diabetes with low insulin production. People with Type 1 Diabetes require insulin in the form of injections and insulin pumps. Therefore Type 1 Diabetes is also called insulin dependent diabetes, or known as autoimmune diabetics with a cause that is not yet known with certainty. If a child has been exposed to Type 1 Diabetes Mellitus (DM) then he must use insulin therapy for the rest of his life, in addition to setting a healthy lifestyle and eating. Parents or families of new diabeticians must be clever in managing the child's diet, blood sugar, and activities. This illustrated book media is aimed at parents of new diabeticians who are struggling and feel confused when dealing with Type 1 Diabetes Mellitus for the first time. This illustrated book media is expected to be a guide for parents to be "friend" with Type 1 Diabetes who will become their child's life partner.

Keywords : Design, book, illustration, diabetes, children and teenager

PRELIMINARY

Diabetes Mellitus (DM) is a serious chronic disease that occurs because the pancreas does not produce enough insulin (a hormone that regulates blood sugar or glucose), or when the body cannot effectively use the insulin it produces (Insulin resistance). Diabetes is an important public health problem, being one of the four priority non-communicable diseases targeted by follow-up by world leaders. The number of cases and the prevalence of diabetes have continued to increase over the past few decades. (WHO Global Report, 2016) The World Health Organization (WHO) also estimates that, globally, 422 million people lived with diabetes in 2014. The largest number of people with diabetes are estimated to come from Southeast Asia and the Western Pacific, accounting for about half the cases of diabetes in the world. Around the world, the number of diabetics has increased substantially between 1980 and 2014, increasing from 108 million to 422 million or about four times as much. Diabetes Mellitus (DM) is also known in Indonesia as diabetes. Based on a survey of the Ministry of Health's Health Research and Development (Balitbangkes) in 2014, diabetes is the number 3 deadly disease in Indonesia. In 2015, diabetics in Indonesia were estimated to reach 10 million people with an age range of 20-79 years (quoted from the International Diabetes Federation). However, only about half of them are aware of his condition. And in 2020, it is estimated that Indonesia will have 12 million people with diabetes.

¹ Universitas Esa Unggul. ratih.pertiwi@esaunggul.ac.id

² Universitas Esa Unggul. nur.asmara@esaunggul.ac.id

³ Universitas Esa Unggul. tri.wahyudi@esaunggul.ac.id

⁴ Widyatama University.

Based on WHO, diabetes consists of 4 types. Diabetes type 1, type 2, type 3 and type 4, namely gestational (pregnancy). Judging from the comparison of the number of cases, type 1 diabetes covers 10-15 percent of the total number of people with diabetes. Data from the Indonesian Pediatric Association (IDAI) shows the incidence of DM in children aged 0-18 years by 700% in a period of 10 years. From September 2009 to September 2018 there were 1213 cases of type 1 diabetes, the most common being in DKI Jakarta, West Java, East Java and South Sumatra.

Type 1 diabetes cannot be prevented and anyone can experience it. In Indonesia the disease was first diagnosed most in the 10-14 years age group with 403 cases, then the 5-9 years age group with 275 cases, the age group less than 5 years with 146 cases, and the least was the age over 15 years with 25 cases. Type 1 diabetes itself is a type of diabetes with low insulin production. People with type 1 diabetes need insulin in the form of injections or insulin pumps. Therefore type 1 diabetes is also called insulin dependent diabetes, or known as autoimmune diabetics with unknown causes. If the child has been exposed to Type 1 Diabetes Mellitus then he must use insulin therapy for life, in addition to setting a healthy lifestyle and eating. Parents and close relatives of new patients with diabetes have an important role to always accompany at least until the patient is independent, given that Type 1 Diabetes Mellitus will be a "friend" for the rest of their lives later. IKADAR was first formed in September 2003 by IDAI doctors (Indonesian Pediatrician Association) namely dr. Aman Bhakti Pulungan, SpA (K), dr. Bambang Tridjaja A, SpA (K), and Prof. Dr. Jose Rizal Latief Batubara, SpA (K). IKADAR's role will not replace the role of doctors in managing DM care, but this organization is expected to be a bridge between doctors and families of people with diabetes. Thus, IKADAR has a role in helping the smooth care of DM children and adolescents.

In IKADAR, the majority of parents of new patients feel confused, panicked, afraid, and so on when the child is first declared Diabetes Mellitus Type 1. That is because the parents and families of new patients with diabetes themselves lack of education about Diabetes Mellitus Type 1. Diabetes in children and adolescents are not easy to control for people with diabetes. When to inject insulin, how to regulate insulin dosages with the child's activities, how when the child is at school, and so on. Most already understand when the doctor explains, but such things require time to learn. Parents and close relatives of new patients with diabetes have an important role to always accompany at least until the patient is independent, given that Type 1 Diabetes Mellitus will be a "friend" for the rest of their lives later. Being aware of the development and increasing number of new Diabetes Mellitus patients every year, and the fact of the lack of education in knowing Diabetes Mellitus Type 1 for parents of new patients with diabetes, it becomes an important need in providing a forum for sharing knowledge. The reason the authors are interested in taking this theme is because parents and families of people with new diabetes need a guide or introduction to type 1 diabetes in children and adolescents. Not just a medical explanation, but also psychologically. In addition, the existing type 1 Diabetes Mellitus education book is only medically packaged, not from the perspective and experience of this type 1 DM. Based on this background, it is possible for the writer to conduct further research for the design of the illustrated book type Diabetes Mellitus Type 1 at the IKADAR.

FOUNDATION OF THEORY AND DATA ANALYSIS Theoretical basis

The theoretical basis is the content that includes the theories used in the discussion of related topic topics. All kinds of theories used in this report will be a reference in the discussion of this report. Explanation of these theories is associated with several theories such as Communication Theory, Media Theory, Publication Strategies, Color Psychology, Semiotics, Cultural Aspects, Design Styles, Design Elements and Principles, Illustrations in Media Publications, Typography in Media Publications, Print Media, Book Theory and Illustration. In the Introduction to Communication Studies (Cangara, 2006. H: 119), the media is a tool or means used to convey messages from communicators to the public. There are some psychologists who view that in communication between people, the most dominating media in communication is the human senses such as the eyes and ears. The messages received subsequently by the senses are then processed by the human mind to control and determine their attitude towards something, before it is stated in action. The media can be clarified in two categories, print and electronic media. Print media is one type of mass media that is printed on sheets of paper. Print media can also be defined as activities related to the process of producing text using ink, letters and paper, or other printed materials. This print media can be grouped into several types namely newspapers, news magazines, special magazines, textbooks, annual report books, newsletters and others. Each type differs from one another in the presentation of the writing and its rubric. According to Andrew Haslam in his book entitled Book Design (2006: 9), a book is a container consisting of a series of

printed and bound pages, useful for announcing, describing and providing knowledge. Andrew Haslam divides 3 basic components on a book cover, namely the book, the page and the grid. Meanwhile according to Dr. K. Satya Murthy in his book "How to Write a Book", part of the book is the title, preface, preface, table of contents, chapter, appendix, glossary, bibliography and index. Suwarno (2011: 77) mentions the general compilers of a book consisting of covers, covers / preliminaries / front matter, contents / text matter, and covers / postliminaries / end matter. Illustration of the picture is a short description of the storyline of a story in order to better explain one scene (Kusmiyati, 1999: 46). In general, illustrations are always associated with explaining a story. Illustrated images are pictures or other visual forms that accompany a text. The main purpose of the illustration is to clarify the text or writing where the illustration was collected (Enciclopedia Americana, 1990: No. 14: 787). According to Tracy Sabin, illustration has the power to easily present context, which is achieved in the use of colors, styles and motifs. Illustration also has the power to isolate the information presented without compromising the accuracy of the information contained in the illustration. The broad sense of illustration is not limited to images and photographs. Illustrations can be in the form of lines, fields and even arrangement of letters can be called illustrations. Illustrations in general are pictures or photos that aim to explain the text and at the same time create attraction. Illustrations can be used to clarify and make it easier for readers to understand the message, as well as add design appeal, not vice versa. Excessive use of illustrations can actually confuse and reduce the value of readability. But not all visual communication design works require striking illustrative images. There are even publication designs that do not require pictures or photos at all. He instead accentuates the title as eye-catching. The title can also be written with variations of letters that are deformed into illustrations.

Data

analysis

Data analysis is a way of processing data into information that is more easily understood and has a solution to a problem, especially those related to research. In the process of designing a conceptual design it is necessary to have targeted data collection and classification. Data processing is one of the important methods in design so that visualization is made right on target. Data analysis was obtained from analysis based on Institutional Descriptions, Visual Communication Media conditions, Competitor Data and SWOT. The Institutional Overview analyzed based on IKADAR is a forum for families of children and adolescents with diabetes in Indonesia centered at Pondok Labu, South Jakarta. This is a communication forum between parents and children with diabetes. Children and adolescents of type 1 DM are in dire need of insulin and close supervision, so that members are expected to be better in handling and more confident. IKADAR's activities, such as getting to know an endocrinologist (a medical science that deals with diseases of the endocrine system and specific secretions called hormones), make it easier to communicate with children, learn about children's independence, introduce insulin medications, how to monitor blood sugar, and diet in children with diabetes. IKADAR was first formed in September 2003 by IDAI doctors (Indonesian Pediatrician Association) who are also pediatric endocrinologists namely Dr. Aman Bhakti Pulungan, SpA (K), dr. Bambang Tridjaja A, SpA (K), and Prof. Dr. Jose Rizal Latief Batubara, SpA (K). At the beginning of its establishment, IKADAR was chaired by Dr. Bambang Tridjaja A, SpA (K). The role of IKADAR will not replace the role of doctors in managing DM care, but this organization is expected to take a role in helping the smooth care of DM of children and adolescents. In 2018, Ibu Dewi Wardani, a Type 1 DM patient and parent of a Type 1 DM patient with Mr. Chewi, founded the IKADAR Indonesia Foundation. Currently IKADAR Indonesia Foundation is chaired by Mr. M. Arief Novianto who is a parent of Type 1 DM patients. Whereas in the analysis based on the Condition of Visual Communication Media, in designing this book it is necessary to pay attention to supporting media in the form of promotional media used by IKADAR so far such as digital posters, banners, and x-banners. Data analysis based on Competitor Data is seen from the development of a product which is certainly inseparable from the presence of competitors who also offer similar products. One that is considered as a competitor in this case is the book Help ... My Child Has Diabetes by Hans Tandra published by PT Gramedia Pustaka Utama. The book Please ... My Child Has Diabetes is the only book that addresses diabetes in children and adolescents and is aimed at parents of diabetes who are on the market. This book is

160 pages in size and was published in Jakarta in 2010. Unfortunately the book Please ... My Child Has Diabetes is hard to find in the form of hardcopy, and can be found in the form of e-books on the Gramedia e-books website.

Analysis based on SWOT consists of Strengths where there are no institutions that work together with IKADAR in making DM Type 1 illustration books, so that the writer gets a positive response and full support from IKADAR members. Second Weakness, where the limited reference books found discussing diabetes in children makes it have to try hard in the process of concept and execution. Third Opportunities, because of the rarity of books that discuss diabetes in children so that it becomes an opportunity or opportunity to get a lot of attention from the community, especially parents people with diabetes. Last Threats, the lack of education of some parents with Type 1 diabetes in reading so that the need for adjustment of words that are easy to understand.

RESEARCH METHODS

The method used by the author in collecting this data is divided into three based on how the writer gets the data that will be needed for the making of the Final Project work is the primary data collection method and the secondary data collection method.

Primary Data Collection Method

The primary data collection method is the collection of data obtained directly from the first party. In this study, the author's primary data collection was obtained from observations and field interviews.

Observation

Data collection techniques where researchers go directly to the field to make observations directly on the symptoms studied. The data that is obtained by a way of collecting and recording systematically about certain things that are related is called observation data. In collecting these observational data, the author directly made observations at several events / seminars organized by IKADAR (Family Association of Diabetes Children and Adolescents) and IDAI (Indonesian Pediatrician Association).

Interview

A way of collecting data is by asking questions directly and verbally about questions related to research. Data obtained by gathering information through direct interviews with relevant resource persons is called interview data. The interview data was carried out to strengthen the observation data, where the writer had the opportunity to conduct interviews with sources in accordance with the intended target market, doctors who handle Type 1 DM patients, parents of people with diabetes and also other children with type 1 diabetes.

Secondary Data Collection Methods

This secondary data collection method is done by collecting document material. In this study, the author not only uses data collected directly by the author, but also utilizes data, documents or libraries produced by other parties. Secondary data is also used to provide additional media and additional processes. Secondary data itself can be obtained from the mass media and various research and library research results. Secondary data collection with library research aims to increase research knowledge so that in carrying out this research, researchers will be equipped with the knowledge to explore the issues that will be studied.

Literature Review Data

Formal data obtained or released by a source of information, quoted and included in a report can be in the form of articles, books, websites and others as reference data relating to the topic taken.

CONCEPTS AND DESIGN RESULTS

After going through various processes and concepts of media design, both the main media and supporting media (promotional media), the results can be drawn from this study, which is divided into several sections.

Main Media

The main media design process of the illustrated book "Type 1 Diabetes in Children and Adolescents" was executed by applying the concepts and visualization elements that were determined in the previous chapter. The following is a description of the layout design and visualization of concepts that have been applied to the main media.

Message Concept

The purpose of designing the concept of this message is as follows:

1. Provide information and educate parents of new patients with diabetes so that they can recognize, control, and "make friends" with type 1 diabetes.
2. Not only discussing medically, but also provide advice and tips based on the experience of the author and the author's parents during "friends" with type 1 diabetes.
3. Designing books that are not only informative but also interesting to read both parents with diabetes and children with type 1 diabetes themselves.

Creative Concepts

The survey results show that the targets are parents of new patients with diabetes who are confused about how to "make friends" with Type 1 diabetes among the middle to upper middle class, men and women aged around 30-40 years, have taken formal education, moderate to high income, and domiciled in JABODETABEK.

Through the analysis of the targets above, an approach is used which is applied through the following concepts.

1. The illustration book media was chosen because it will help visualize the situation in the book's contents better.
2. Illustrations in the book are in every three pages. In addition to maintaining informative contents, the number 3 (three) was chosen because the majority of insulin therapy used (basal-bolus) was in the form of 3x injections of ultra short act every time before meals and injections of ultra long act which were injected 24 hours.
3. Not every page uses a background, so it doesn't look monotonous and remains comfortable to read.
4. The size of the book 14 x 21 cm which is relatively small, is expected to be able to make the media easy to carry everywhere so that it can be a guide ready to help parents of new patients at any time.
5. The existence of merchandise in the form of calendars with priority notes that can be compiled, bookmarks and media kits containing blood sugar journals and diabetes activities, temporary tattoos as an injection area guide, sweets that can be used during emergencies, as well as a place to store blood sugar or insulin devices for children with diabetes.

Media Concepts



Figure 1 Book Cover

This book is 14 x 21 cm in size, the cover uses 210 gsm art carton paper with doff and spot UV lamination and in the contents section uses fancy paper material, 70 gsm bookpaper and 80 gsm fancy tracing paper as a boundary between chapters. The number of pages in the book is 72 pages.

Visual Concept
 - Visual identity

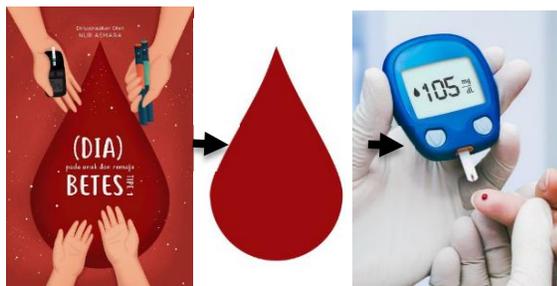


Figure 2. Visual identity on the book cover

Visual identity in the book is a form of blood droplets that symbolize blood glucose (diabetes), so that its placement is in the middle with a large size as a point of interest. Whereas on the contents of the book, visual identity is placed at the bottom corner of the page number.

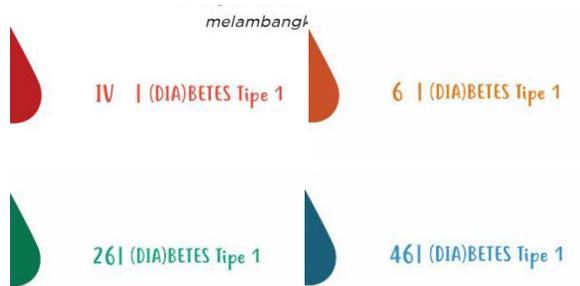


Figure 3. Visual identity of the contents of the book

Color



Figure 4. Color in the book

The color used on the book cover uses more red and its derivatives as the color of blood glucose which is identical to diabetes. Besides the red color also symbolizes energy, strength, joy, and love. The use of this color also illustrates the emotional side of parents with diabetes with Type 1 Diabetes children. While in the contents of the book, the use of orange, green, and blue colors as the colors contained in each chapter of the book visualizes three colors on each type of insulin. Logos and visual elements that are in books as well as promotional and supporting media, and also basic colors like black and white.

The selection of typography for headlines and sub headlines both on the cover and the contents of the book is the type of Script Just Tell Me What. This is so that not too many fonts are used, so it is easy to read. Typography used is adjusted in order to get harmony, good readability, and according to the concept. get harmony because it uses the same concept.

ABCDEFGHIJKLM
NOPQRSTUVWXYZ
abcdefghijklm
nopqrstuvwxyz
0123456789!/?#

Figure 5. Font Just Tell Me What pada Headline dan Sub Headline

The type of font used in bodycopy is considered with legibility and readability because, the font will be combined with illustrations. The use of Sans Serif type fonts are Gotham Book and Gotham Medium.

Gotham Book	Gotham Medium
ABCDEFGHIJKLM	ABCDEFGHIJKLM
NOPQRSTUVWXYZ	NOPQRSTUVWXYZ
abcdefghijklm	abcdefghijklm
nopqrstuvwxyz	nopqrstuvwxyz
1234567890	1234567890

Figure 6. Gotham Book and Medium fonts on bodycopy

In the media promotion, in addition to the two types of fonts above, the author also added another type of script font, namely Always In My Heart.

ABCDEFGHIJKLM
NOPQRSTUVWXYZ
abcdefghijklm
nopqrstuvwxyz
0123456789!/?#

Gambar 7. Font Always In My Heart pada media promosi

Illustration



Figure 8. Illustration on book cover

On the front of the cover, the hands of both parents who each hold a blood sugar checker and insulin injections which is crucial for diabetes. The parents' hands symbolize parents who are ready to provide assistance to the diabetic child, as well as illustrations of children who hold their hands ready to receive help from both parents. While on the back of the cover, the illustration shown is when the parent holds and holds the child's hand with the complete diabetes along with a blood sugar and insulin check tool which is interpreted as a parent that guides the child and Type 1 Diabetes in the future.



Figure 9. Illustration of chapter separator and chapter intro

In each chapter separator in the form of insulin patterns in three colors and types corresponding to each chapter's color scheme. Likewise in the intro part of the book, illustrations are made more full and different, so there is emphasis and differentiation in both layout and illustration.



Figure 10. Fullpage illustration of the beginning and end of a book

On the three pages before entering chapter 1 and after chapter 3, there is a full page illustration in the form of a story. The initial illustration before entering chapter 1 illustrates when a child is declared to have diabetes.

Meanwhile, the final illustration after chapter 3 illustrates the person with diabetes and parents who have been "friends" with diabetes.

Promotion media

Media which is used as a solution in promoting Illustration Diabetes Mellitus Type 1 books at IKADAR is expected to be able to provide information to the target audience about the education offered. The media used must be able to inform and be able to build a positive image to the audience, especially on the intended target.

Poster



Figure 11. Media promotion poster

Poster here aims to lure the masses outside to be interested in buying and reading illustrated books on education about Type 1 Diabetes Mellitus. Posters are selected to display the contents of books and promotional media directly to be seen by consumers who are in public places. In this case, the distribution is done by pasting posters in schools, health centers, hospitals, and other public places that have consumers who take turns passing through these places.

Leaflet



Figure 12. Media promotion leaflets

Used to promote the sale of Type 1 Diabetes books to Children and Adolescents will be placed when the launch of Type 1 Diabetes books on Children and Adolescents is ongoing and several places namely in bookstores (Mizan stores and Bookstores scattered around JABODETABEK).

X-Banner



Figure 13. X-banner promotion media

X-banner is a media used to convey information, in the form of a banner with an X-shaped buffer construction. In this case, the x-banner is made as supporting media and placed on the book display booth during the event.

Banner



Figure 14. Media promotion banners

A banner is a long cloth that is stretched and contains brief information about a particular product. In this case, banners are also placed on the book display booth during the event.

Magazine and Digital Advertising



Figure 15. Media promotion of magazine advertisements

Magazine ads are promotional media that are published in magazines. Magazine advertisements will be published in AyahBunda magazine, while advertisements with digital promotions will be distributed through the media website Detikcom partner media section of the DetikHealth channel which has the right audience and is appropriate for the distribution of these advertisements.

CONCLUSIONS AND RECOMMENDATIONS

Conclusion

Being a parent of a Type 1 Diabetes Mellitus child is not easy. Type 1 diabetes is not a condition that needs a lot of "restrictions", but "freedom that is responsible". Children and adolescents with diabetes can eat, move, and have the same future as other children. Type 1 diabetes will be a lifelong friend for the person with it. Parents with diabetes need to guide them to prepare themselves to be independent. How to regulate insulin dosages, activities and blood sugar can be a challenge for both the child and parents. The design of the Illustration Type 1 diabetes book for Children and Adolescents is used as an educational medium that gives direction and guidance to parents of new Type 1 Diabetes patients. The illustrations in this book are visual aids in the delivery of book content. To produce a printed media output of books that can educate well, in this case a Type 1 Diabetes book on Children and Adolescents for new patient parents, it is necessary to collect data in the form of observation, interviews and literature studies. Where with these methods the author managed to get various kinds of information and data that can be processed to produce good copywriting and art directing in this book. In the process of designing print books, the role of art directing plays a big role because the determination of visual identity that can later be seen can be determined by the art directing process. No less important than that, a good book print media certainly also has good writing and language, of course that is determined by a good copywriting process as well. Of course, the layout of a book gives the impression that makes it easier for readers to get clear information. This can be obtained in the layout process in the design of a book print media. With the contents of serious and many discussions, how the authors design the layout of the book without looking stiff and pleasing to the eye without reducing information on the contents.

With this design the author can also conclude that after a book has been produced, it is necessary to use promotional media to introduce this book to the intended target market. The selection of the right media is of course very influential in the promotion of books. In the promotion of Type 1 Diabetes books for children and adolescents, there are print media as well as digital media. Where these two media can complement each other in promoting this book. In addition, the usefulness of the merchandise obtained is also an attraction for the promotion of Type 1 Diabetes books for Children and Adolescents.

Suggestion

With such a planned and thorough concept, this illustrated book on Type 1 Diabetes in Children and Adolescents is expected to be one of the assistance to parents of new patients in overcoming anxiety and confusion in facing diabetes in children and adolescents. The author hopes that the publication media in the form of Illustrated Type 1 Diabetes in Children and Adolescents can be published more widely in areas outside JABODETABEK, so that more and more parents of new patients can "make friends" with Type 1 Diabetes in Children and Adolescents.

DAFTAR PUSTAKA

Cangara, Hafied. (2006). *Pengantar Ilmu Komunikasi*. Jakarta: PT Raja Grafindo Persada.

- Dr. K. Murthy, Satya. (2009). *“How to Write a Book”*. New Delhi: Aph Publishing Corporation
- Faisal, Endang Triningsih. (2010). *Demografi Diabetes Melitus Tipe-I pada Anggota Ikatan Keluarga Penyandang Diabetes Anak dan Remaja (IKADAR)*. *Majalah Kedokteran Bandung*, Volume 42, No.2 (83-85)
- Haslam, Andrew. (2006). *Book Design*. London: Laurence King Publishing
- Kusmiati R, Artini, Sri Pudjiastuti, dan Pamudji Suptandar. (1999). *Teori Dasar Desain Komunikasi Visual*. Jakarta: Djambatan.
- Tandra, Hans. (2010). *Tolong.. Anaku Kena Diabetes: Yang Harus Anda Ketahui tentang Diabetes pada Anak dan Remaja*. Jakarta: PT. Gramedia Pustaka Utama
- Putri, Aditya Widya. (2017). Anak-Anak Bisa Kena Diabetes, Batasi Makanan-Minuman Bergula. <https://tirto.id/anak-anak-bisa-kena-diabetes-batasi-makanan-minuman-bergula-cBut>
Diakses 28 Juni 2019, 19.25 WIB
- Basari, M. Taufikul, dan Dewi Andriani. (2018). Waspadai Diabetes Tipe 1 Pada Anak. <https://lifestyle.bisnis.com/read/20181115/106/860297/waspadai-diabetes-tipe-1-pada-anak>
Diakses 4 Juli 2019, 16.39 WIB