

Project 1:  
Visualizing Statistical Information

# Process Book

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VISM-3002-001 (Fall 2021) Data Vis & Visual Analytics

# Research

I explored the data set “Health behaviour in school-aged children 2002, student response to question: How easy is it to talk to the following persons about things that really bother you?” from a 2002 Statistics Canada survey. This data set covers how easy it is for school-aged children to talk to specific people about their problems. The information falls under the category of **health behaviours** as it relates to **children’s emotional development** and **important relational bonds**. I visualized children’s (boys and girls) responses about their mother and father.

Source: Statistics Canada. (2002). Table 13-10-0282-01 *Health behaviour in school-aged children 2002, student response to question: How easy is it to talk to the following persons about things that really bother you?* [Data set]. <https://doi.org/10.25318/1310028201-eng>

			Canada
			Mother
Sex	Age group	Student response	2002 Percent
Males	11 years	Very easy	50
		Easy	36
		Difficult	9
		Very difficult	3
		Don't have or see this person	1
	13 years	Very easy	36
		Easy	42
		Difficult	14
		Very difficult	7
		Don't have or see this person	2
	15 years	Very easy	27
		Easy	42
		Difficult	18
		Very difficult	9
		Don't have or see this person	4
Females	11 years	Very easy	46
		Easy	33
		Difficult	12
		Very difficult	5
		Don't have or see this person	3
	13 years	Very easy	32
		Easy	42
		Difficult	17
		Very difficult	8
		Don't have or see this person	1
	15 years	Very easy	26
		Easy	40
		Difficult	23
		Very difficult	9
		Don't have or see this person	2

			Canada
			Father
Sex	Age group	Student response	2002 Percent
Males	11 years	Very easy	35
		Easy	41
		Difficult	14
		Very difficult	5
		Don't have or see this person	4
	13 years	Very easy	23
		Easy	38
		Difficult	22
		Very difficult	10
		Don't have or see this person	7
	15 years	Very easy	14
		Easy	40
		Difficult	22
		Very difficult	13
		Don't have or see this person	11
Females	11 years	Very easy	20
		Easy	36
		Difficult	26
		Very difficult	12
		Don't have or see this person	7
	13 years	Very easy	9
		Easy	32
		Difficult	33
		Very difficult	17
		Don't have or see this person	9
	15 years	Very easy	9
		Easy	27
		Difficult	32
		Very difficult	23
		Don't have or see this person	10

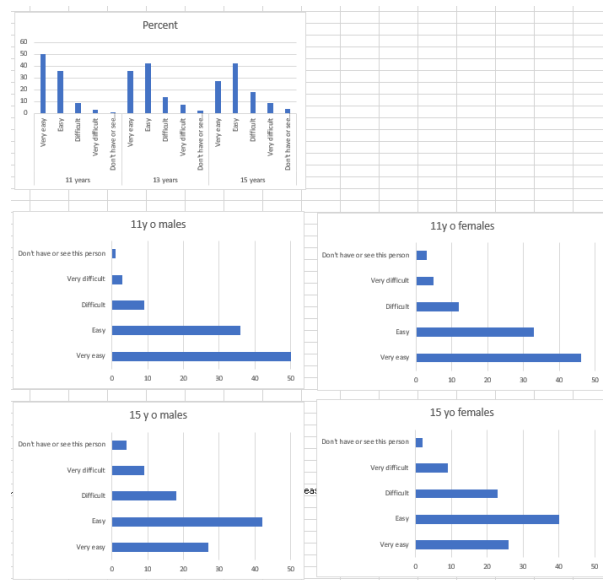
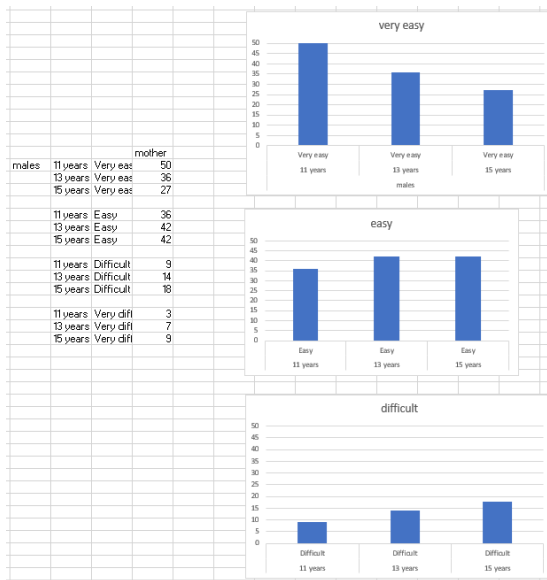
# Looking at the Data

I imported the data set into Excel and played around with it. I rearranged the data and generated simple graphs to quickly see the information.

I decided to graph the data with **horizontal bar graphs** because I thought it was the most appropriate fit. With this, the labels could be read clearly with the horizontal text and the change in the bar is visible.

**Some insights I noticed from looking at the data:** boys found it easier to talk to people than girls, all children found it more difficult to confide in their parents as they grew older, all children grew to find it easier to talk to their best friend as they grew older, the percentage of children who don't have a father in their life is larger than the percentage which don't have a mother in their life, girls grow to find it more difficult than easy to talk to their fathers, overall it's easier for children to talk to their mothers than fathers, and more.

Sex	Age group	Student re	Canada
Males	11 years	Very easy	50
		Easy	36
		Difficult	9
		Very diffic	3
		Don't have	1
	13 years	Very easy	36
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		Very diffic	9
		Don't have	2



Sex	Age group	Student re	mother
Males	11 years	Very easy	50
	13 years	Very easy	36
	15 years	Very easy	27
	11 years	Easy	36
	13 years	Easy	42
	15 years	Easy	42
	11 years	Difficult	9
	13 years	Difficult	14
	15 years	Difficult	18
	11 years	Very diffic	3
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	11 years	Easy	33
	13 years	Easy	42
	15 years	Easy	40
	11 years	Difficult	12
	13 years	Difficult	17
	15 years	Difficult	23
	11 years	Very diffic	5
	13 years	Very diffic	8
	15 years	Very diffic	9

# Sketches

I opened Illustrator and used the graphing tool to get proportional data on graphs.

For my first set of graphs, I created four horizontal bar graphs showing girls' and boys' ease talking to their mothers and fathers.

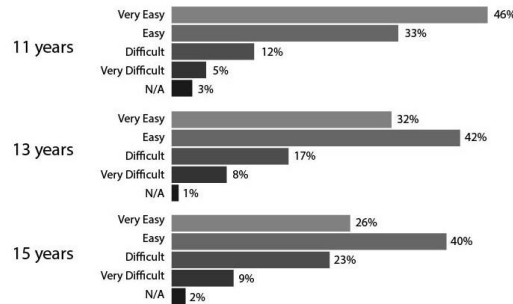
I placed the ages 11, 13, and 15 downward in chronological order since that is how people read graphs (top to bottom), so the age increases as they read down.

The labels' text is horizontal for legibility.

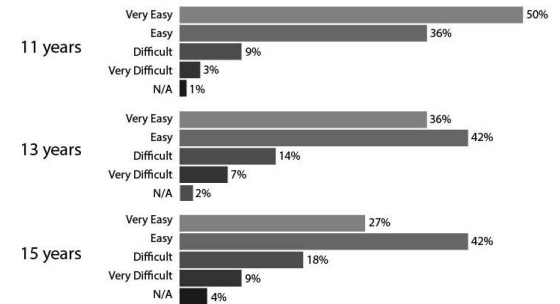
I made the titles of the graphs clear and bolded the people the data involved.

I wrote the percentages next to the bars for clarity.

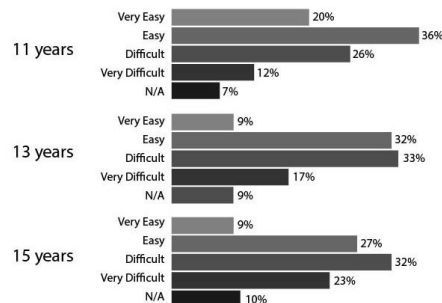
**Girls' Ease Talking to Mother** about their Problems



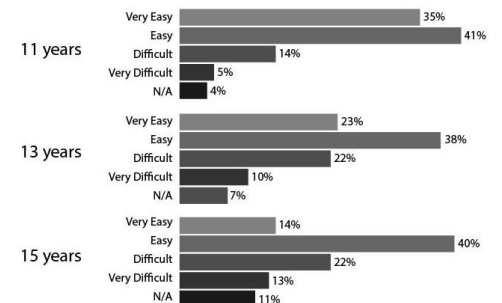
**Boys' Ease Talking to Mother** about their Problems



**Girls' Ease Talking to Father** about their Problems



**Boys' Ease Talking to Father** about their Problems



# Sketches

I added colour to boost clarity.

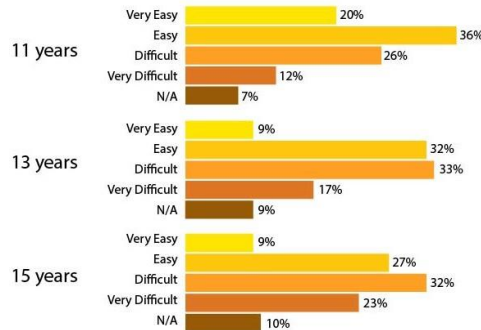
With lines, I attempted to show the trends that as children get older, the ease of talking to their parents goes down and the difficulty of talking to their parents goes up.

Unfortunately, the graphs looked very cluttered with this. (Adding dots to the indicated bars didn't help.)

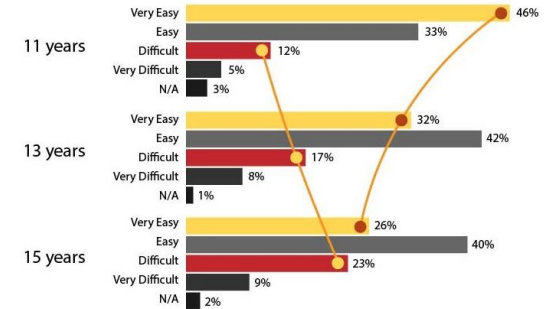
I also realized that having four graphs together looked a bit confusing.

I went back to the drawing board and looked through the class resources. I found the **butterfly chart**! With this, I would have two graphs instead of four – the butterfly chart can pack in more information while still being clear to the viewer.

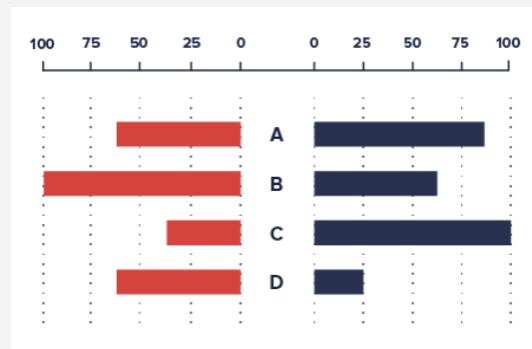
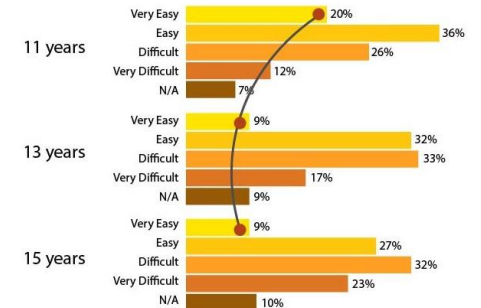
### Girls' Ease Talking to Father about their Problems



### Girls' Ease Talking to Mother about their Problems



### Girls' Ease Talking to Father about their Problems



Butterfly Chart from Data Viz Project

<https://datavizproject.com/data-type/butterfly-chart/>

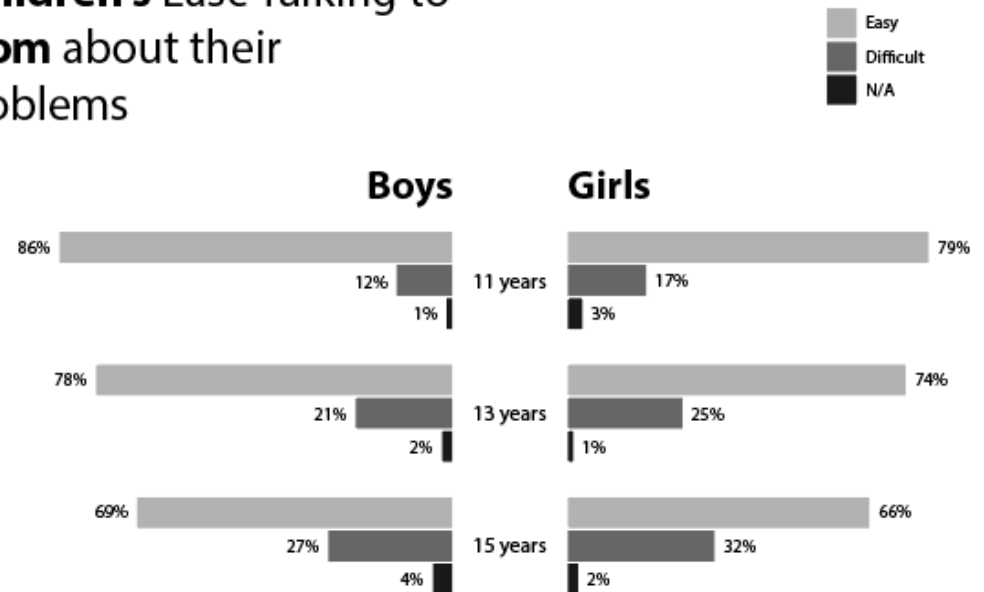
# Process

The data on the butterfly chart was easier to understand!

I merged the categories “very easy” and “easy” into only “easy.” I merged the categories “very difficult” and “difficult” into only “difficult.” This made it easier to understand the information on the graph as unnecessary clutter was eliminated. With this change, the trends also became more visible.

I added a legend with the colours of “easy” and “difficult” to remove the written labels on the graph as things got shifted around.

## Children’s Ease Talking to Mom about their Problems

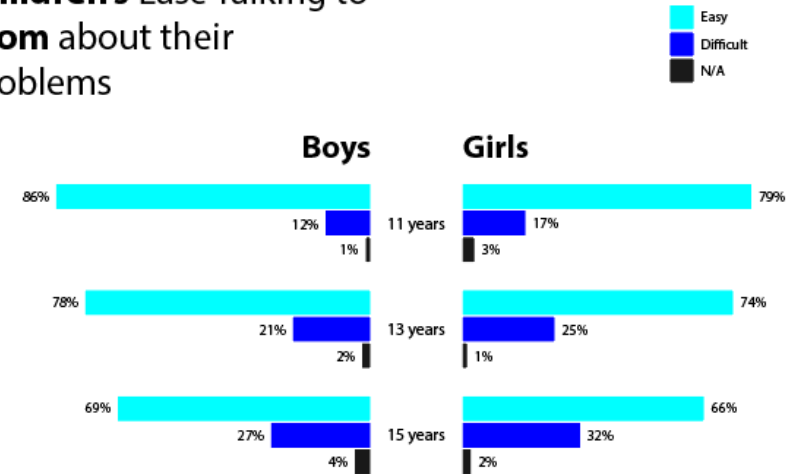


# Process

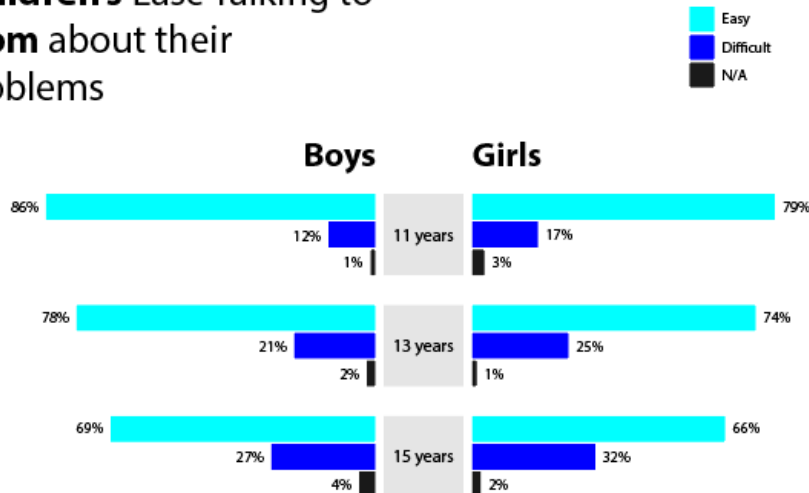
Adding colour made things more visible.

I asked some people for feedback and they said the colours were too vibrant and saturated. As well, they said the middle of the chart felt off. I experimented and made the age category distinction more clear, which also improves chart legibility.

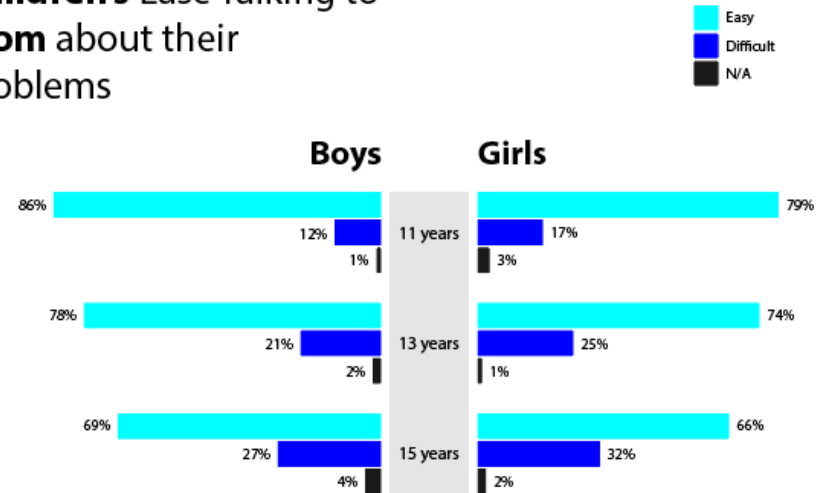
## Children's Ease Talking to Mom about their Problems



## Children's Ease Talking to Mom about their Problems



## Children's Ease Talking to Mom about their Problems



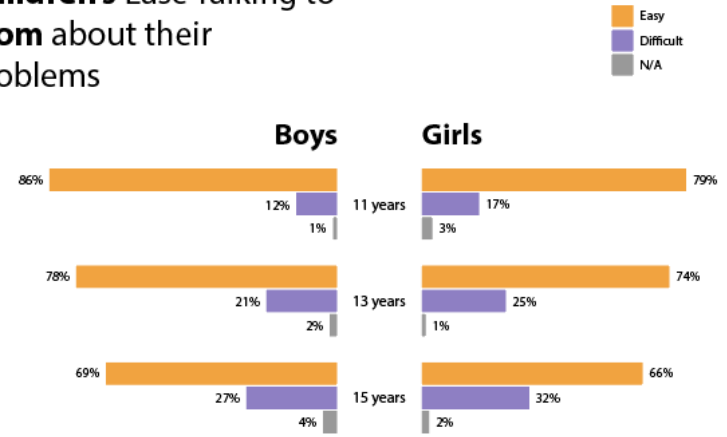
# Process

I used [ColorBrewer](#) to find a colour scheme that was good for accessibility, like being colour blind safe.

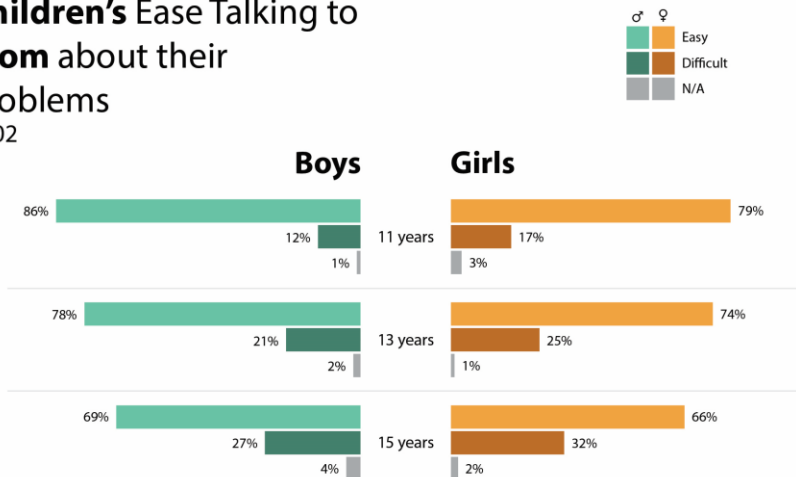
Having two different colours for “easy” and “difficult” worked okay. Feedback from people pointed out that it was tough to see the difference between boys and girls. So, I implemented green monochrome for boys and orange monochrome for girls – this worked well to show the different genders and different ease levels (easy/difficult.)

To separate the age categories, I added light grey lights.

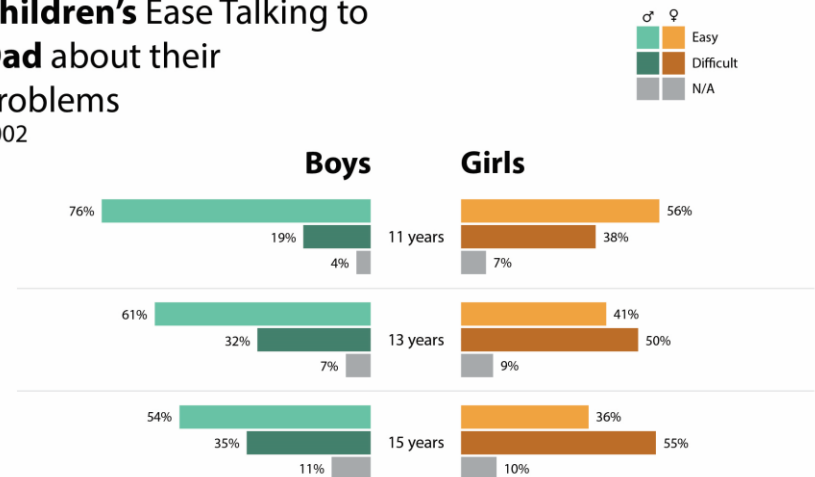
## Children’s Ease Talking to Mom about their Problems



## Children’s Ease Talking to Mom about their Problems 2002



## Children’s Ease Talking to Dad about their Problems 2002





# Process

The graphs had made lots of progress since the beginning of my work.

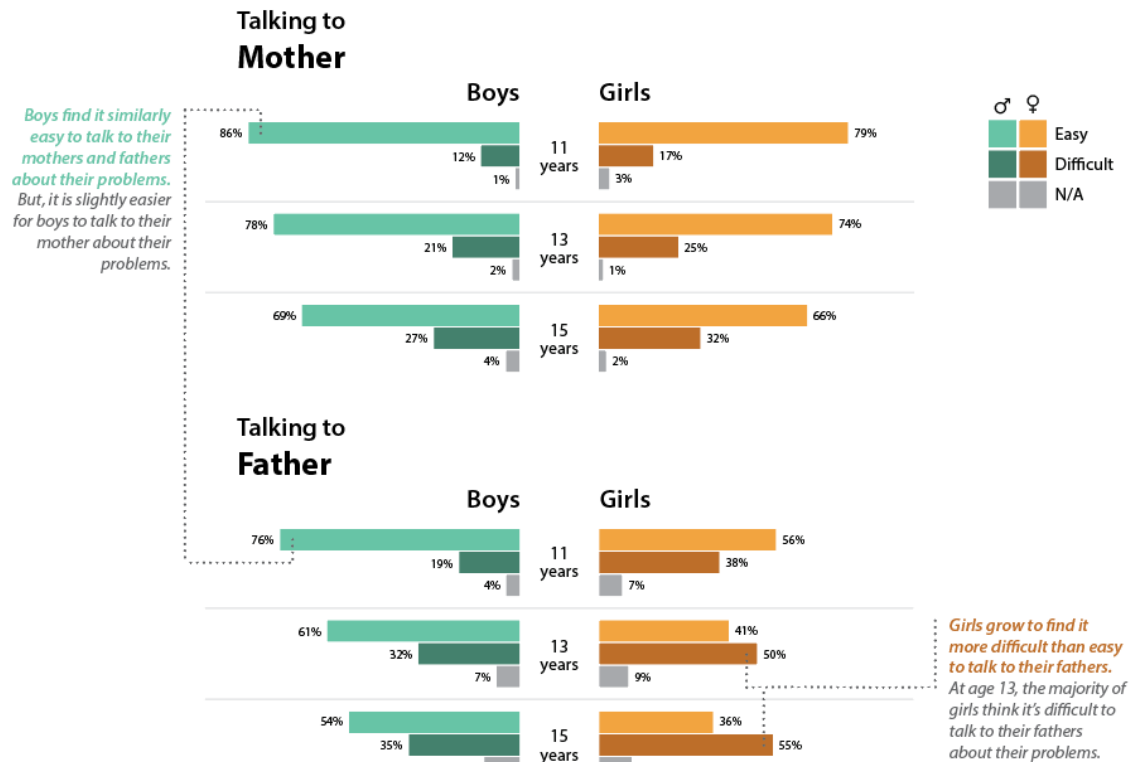
I received more feedback, which included adding a more descriptive title and using annotations to point out key details of the data story.

I used the main insight of the graphs as the overall title: Children's Confiding in their Parents Becomes More Difficult as they Grow Up.

I shortened the individual graph titles to make reading the data visualization easier and more clear.

I added callouts with dotted lines to show interesting insights. I coloured the text with relevant colours to highlight the key idea.

## Children Confiding in their Parents Becomes More Difficult as they Grow Up



# Final

As finishing touches, I added a light grey underline to the title, a subtitle (including the source and date of the data), space adjustments, font size adjustments, and noting the source at the bottom.

I'm happy with the final product, especially as I am new to data visualization and was daunted by this project!

## Children's Confiding in their Parents Becomes More Difficult as they Grow Up

Statistics Canada 2002 Survey Investigates Health Behaviours in Children

