

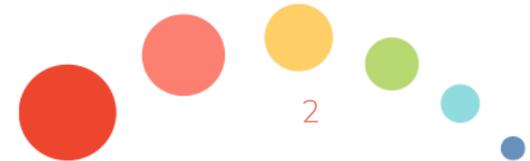


The Visual Tools in MAXQDA

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Visual Features we will cover

- MAXMaps
- Code Relations Browser
- Code Matrix Browser
- Crosstabs
- Interactive quote matrix
- QUAL themes by QUAN Groups
- Statistics by QUAL Groups



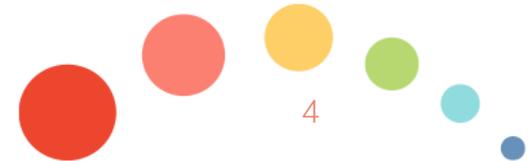
MAXMaps

- Graphically represent the different elements of MAXQDA
 - Codes
 - Documents
 - Memos
 - Coded segments



Why use MAXMaps

- Create concept maps
- Rather than static themes/categories, show relationships between different codes and themes/categories
- Organize concepts into a logical flow of ideas
- Include a conceptual model in a manuscript
- Use the figure to organize and structure findings section



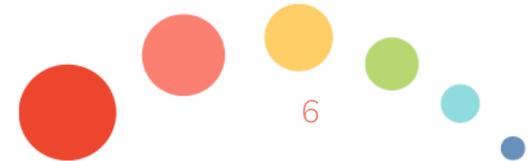
MAXMaps and Qualitative Approaches

- Visually depicting a grounded theory
- Linking codes or themes to cases
- Comparing cases

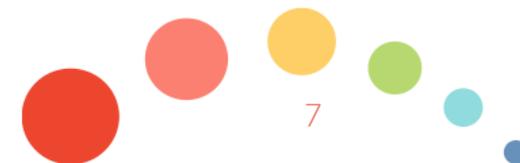
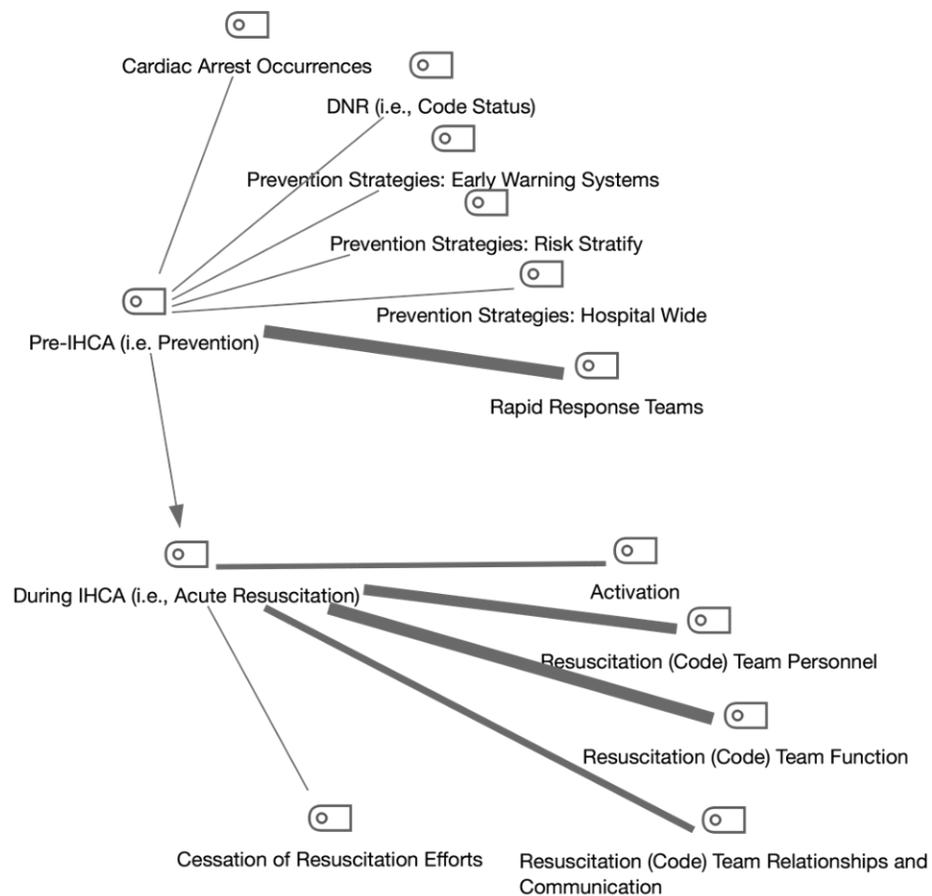


Exporting a Map

- Export Map as
 - .png
 - .jpg
- Transparency setting

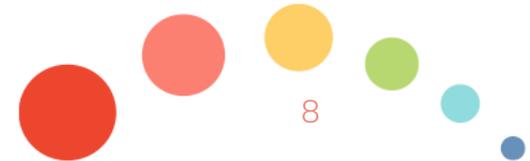


Example Map



Starting with the Code Relations Browser

- The code relations browser allows you look at whether codes occur together in documents
 - e.g., whether some codes are more likely to be applied together in a transcript
 - It is similar to a contingency table in statistics

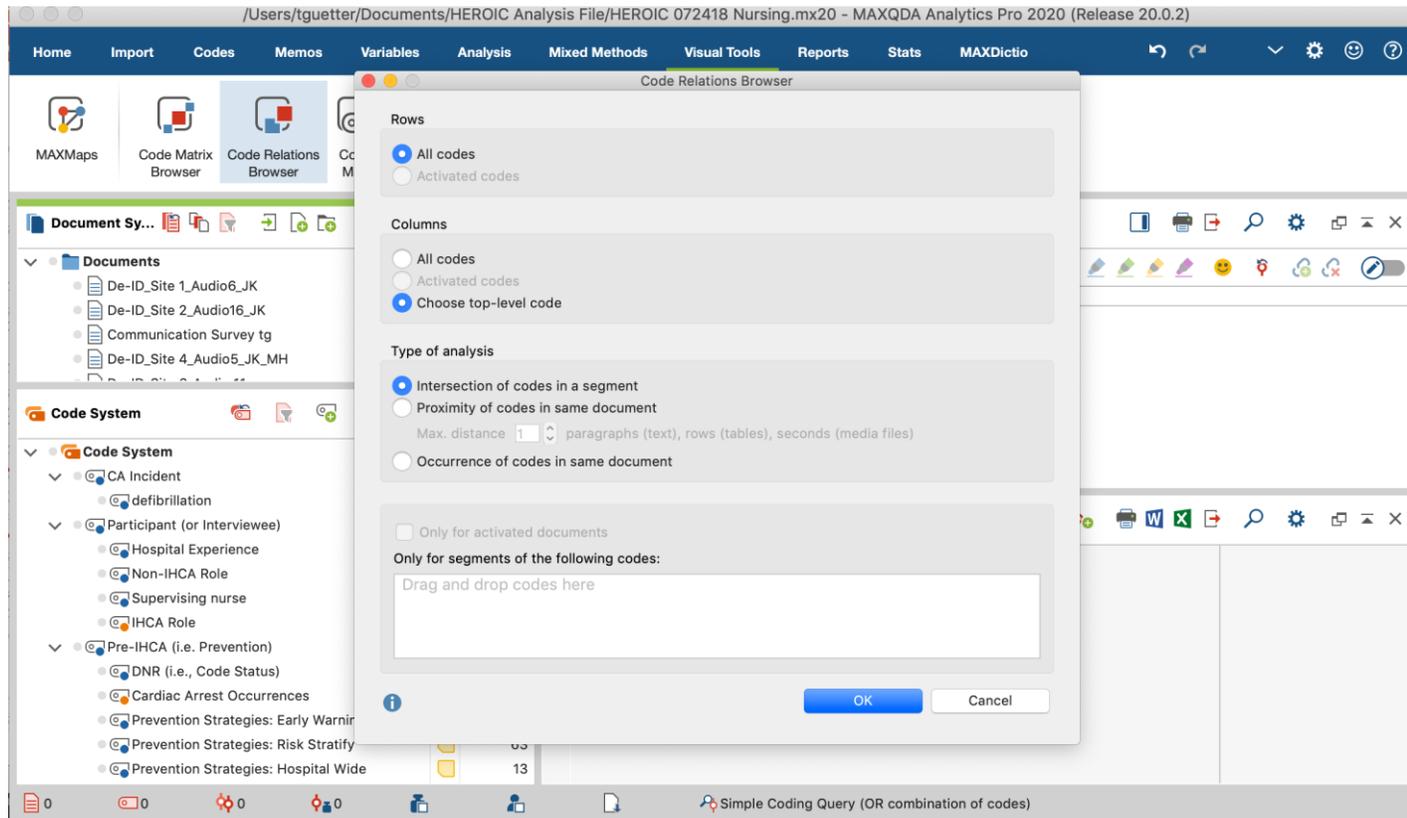


Starting with the Code Relations Browser

- Select Visual Tools > Code Relations Browser
- Select whether you want rows and columns to include all codes or just activated ones
 - Recommend starting with all rows but only activating certain codes of interest as columns. Otherwise, it can be too many to look at
- Note: can count “hits” per document only once as opposed to counting each times the code is applied
- Can also change in the next screen

Finding the Code Relations Browser

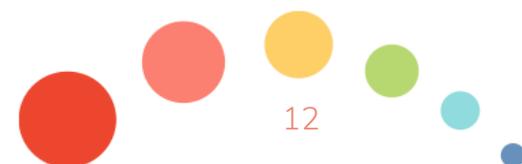
- Select Visual Tools > Code Relations Browser



Using the Code Relations Browser

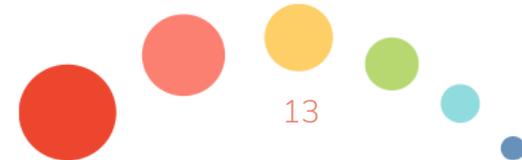
- By default, it gives different size boxes for the frequency of co-occurrence
- Click 123 to show the count instead of boxes
- It also shows a sum of the number of times the code has been applied
- Click the # button to count hits once per document.
- **NOTE:** You can click on any of the boxes or number and it will automatically build a query and open those coded segments in retrieved segments

Code System	Pre-IHCA (i.e. P...	DNR (i.e., Co...	Cardiac Arrest...	Prevention St...	Prevention St...	Preventio...	Rapid Respons...	SUM
Hospital Experience								0
Non-IHCA Role								0
Supervising nurse								0
IHCA Role			■				■	5
▼ Pre-IHCA (i.e. Prevention)								0
DNR (i.e., Code Status)							■	1
Cardiac Arrest Occurrences							■	3
Prevention Strategies: Early Warnin					■		■	12
Prevention Strategies: Risk Stratify				■			■	13
Prevention Strategies: Hospital Wid							■	2
Rapid Response Teams		■	■	■	■	■	■	27
▼ During IHCA (i.e., Acute Resuscitation)								0
Activation				■	■	■	■	19
Resuscitation (Code) Team Personr			■	■	■		■	18
Resuscitation (Code) Team Functio			■	■		■	■	12
Resuscitation (Code) Team Relator				■	■		■	15
Cessation of Resuscitation Efforts								0
▼ Post-IHCA								0
Prognostication		■		■				4
Cardiac Catheterization				■	■		■	6



Code Matrix Browser

- Compare documents
- Compare document sets
- Examine frequency of codes
- Look for patterns of codes



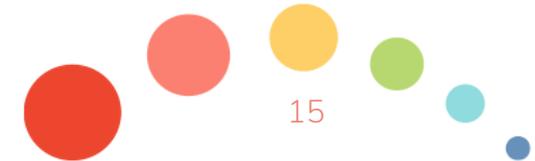
Creating Document Sets

- Right click on set > new set

The screenshot displays the MAXQDA software interface. On the left, the 'Document System' pane shows a list of audio files under the 'SETS' section. A context menu is open over the 'SETS' section, with 'New Set' highlighted. Below this, the 'OVERVIEWS' section lists various analysis tools like 'Coded Segments', 'Memos', 'Variables', 'Summaries', 'Codes', 'Links', 'Word Cloud', and 'MAXDictio: Quantitative Content Analysis'. The main window, titled 'Document Browser: De-ID_Site+9_Audio12', shows a transcript with speaker labels (P: Participant, I: Interviewer) and text. A blue selection box highlights a portion of the transcript. At the bottom, a 'Retrieved Segments' pane is visible.

Code Matrix Browser

Code System	Site=9	Site=8	Site=7	Site=6	Site=5	Site=4
Participant (or Interviewee)						
Non-IHCA Role						
IHCA Role						
Pre-IHCA (i.e. Prevention)						
Cardiac Arrest Occurrences						
DNR (i.e., Code Status)						
Prevention Strategies: Early Warnin						
Prevention Strategies: Risk Stratify						
Prevention Strategies: Hospital Wid						
Rapid Response Teams						
During IHCA (i.e., Acute Resuscitation)						
Activation						
Resuscitation (Code) Team Personr						
Resuscitation (Code) Team Functio						
Resuscitation (Code) Team Relatio						
Cessation of Resuscitation Efforts						
Post-IHCA						
Prognostication						
Cardiac Catheterization						
Therapeutic Hypothermia						
Specialized Care						
Holistic Processes (Pre, During and Pos						
Family Interactions and Presence						
Continuity of Care						
Administrative Involvement and Org						
Resources and Infrastructure						
Technology and Innovation						
Clinical Champion						
Geography						
Training and Education: ACLS, Moc						
Teaching and Education: Informal F						
Hindrances to Care at the Site (i.e.,						
QI Organizational Culture						
Systems Learning						
Other						



Crosstabs

Crosstabs allows you to build contingency tables looking at codes-by-quantitative variables.

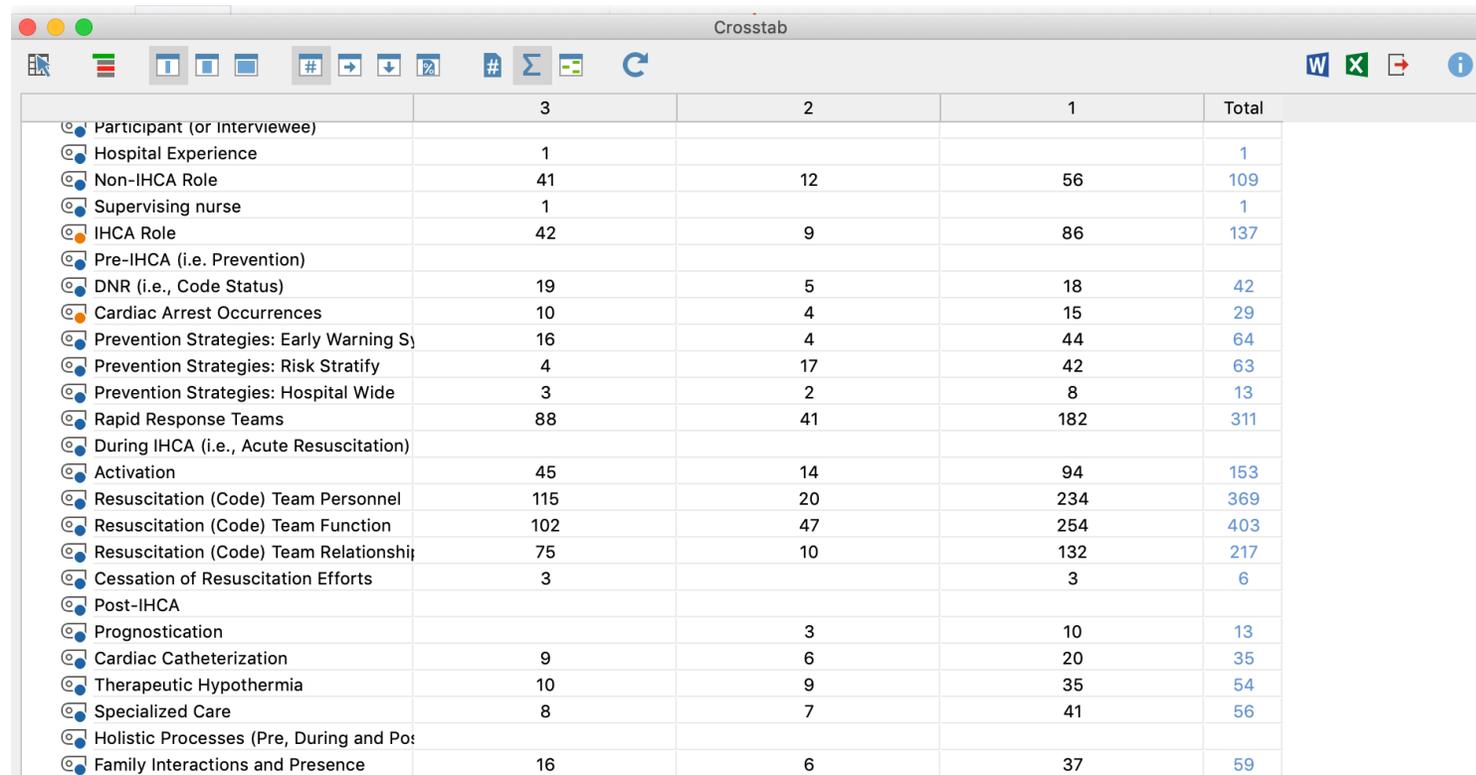
For example, you could compare codes by gender, age, site, etc.

Choose codes and define columns

- E.g., high, medium, low on quan. variable
- E.g., demographic characteristics

Crosstabs

- Similar to code relations browser
- Group by document variable (columns)
- Compare code frequencies by document variable
- Can click on any of the boxes or number and it will automatically build a query
- Opens those coded segments in retrieved segments
- Review coded segments in context and explore deeper



The screenshot shows a window titled "Crosstab" with a table of data. The table has four columns representing categories (3, 2, 1) and a "Total" column. The rows list various document variables and their corresponding counts for each category and the total.

	3	2	1	Total
Participant (or Interviewee)				
Hospital Experience	1			1
Non-IHCA Role	41	12	56	109
Supervising nurse	1			1
IHCA Role	42	9	86	137
Pre-IHCA (i.e. Prevention)				
DNR (i.e., Code Status)	19	5	18	42
Cardiac Arrest Occurrences	10	4	15	29
Prevention Strategies: Early Warning S	16	4	44	64
Prevention Strategies: Risk Stratify	4	17	42	63
Prevention Strategies: Hospital Wide	3	2	8	13
Rapid Response Teams	88	41	182	311
During IHCA (i.e., Acute Resuscitation)				
Activation	45	14	94	153
Resuscitation (Code) Team Personnel	115	20	234	369
Resuscitation (Code) Team Function	102	47	254	403
Resuscitation (Code) Team Relationship	75	10	132	217
Cessation of Resuscitation Efforts	3		3	6
Post-IHCA				
Prognostication		3	10	13
Cardiac Catheterization	9	6	20	35
Therapeutic Hypothermia	10	9	35	54
Specialized Care	8	7	41	56
Holistic Processes (Pre, During and Pos				
Family Interactions and Presence	16	6	37	59

Using the interactive quote matrix

- Prepare data to ensure:
 - Grouped on variable
 - Different levels of a categorical variable
- Compare coded segments dynamically in the software, one code at a time
- View segment in document by clicking on source
- Can export to review segments

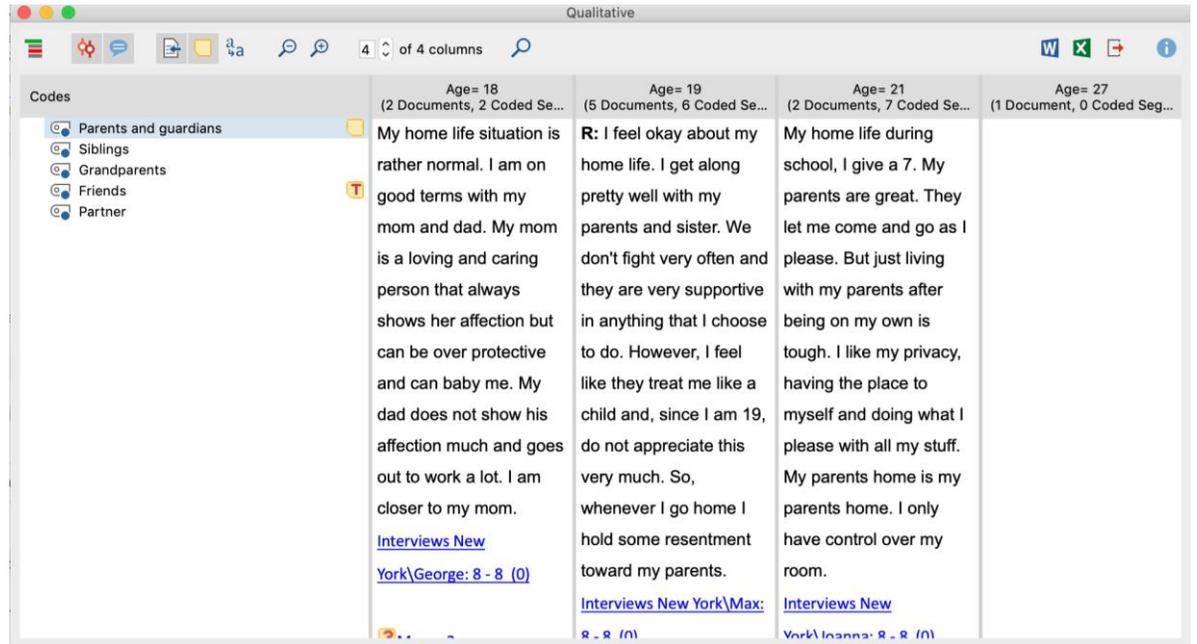
The screenshot displays the MAXQDA software interface for an interactive quote matrix. The window title is "interactive Quote Matrix". On the left, a "Codes" list is visible, with "Partner" selected. The main area is divided into two columns representing different relationship statuses: "Relationship status= partnership (3 Documents, 4 Coded Segments)" and "Relationship status= single (8 Documents, 10 Coded Segments)". Each column contains text excerpts with blue hyperlinks indicating their source, such as "Interviews New York\Robyn: 6 - 6 (0)" and "Interviews New York\Max: 19 - 19 (0)".

Interactive Quote Matrix for Mixed Methods Analysis

- Dynamic comparison of groups
- Explain variation or differences on a variable
- Conduct iterative mixed methods analysis
- Capture segments for a joint display to
 - Explain variation on outcome
 - Examine variation in instrument validation studies
 - Compare themes on levels of a variable

QUAL Themes by QUAN Groups

- Can show segments or summaries by document variable
- For example,
 - Compare high, middle, low performers
 - Compare intervention to control
 - Compare age ranges
- Similar to interactive quote matrix

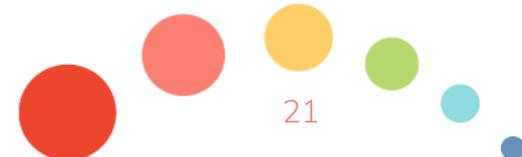


Joint Display of Themes by Quantitative Groups

Table 1. A joint display of qualitative themes by quantitative performance level on an objective structured clinical examination.

Themes	Objective structured clinical examination advanced communication assessment		
	Low (<0.55)	Medium (0.54-0.98)	High (>0.98)
Useful communication skills	N/A ^a	“Effective communication both verbal and nonverbal will be essential in getting the best care for patients.”	“I thought that I was given helpful strategies for interacting with patients such as asking open-ended questions, validating feelings, and types of nonverbal cues to use.”
Remembering nonverbal skills	“Smiling and nodding is also important”	“Non-verbal cues can be very helpful. There are good times to nod and also times when it is not appropriate.” and “In emotionally charged situations, I realize that using non-verbal communication is very important.”	“Helped teach how to read facial expressions from people such as when the nurse was upset.”
Motivated to learn more	N/A	“I would definitely benefit from more training such as this. I found myself hoping that there would be another simulation or two.”	“It would be interesting to go through other scenarios, and to see if this actually has a positive effect on my future interactions with patients.”
Prefer humans	“Hard to engage in non-verbal communication when you know you are just talking at a computer.”	“I think that training for communication with patients is better done with live patients.”	“Your true response can only come from human to human interaction...program is much stronger at allowing a person to think about their verbal responses.”

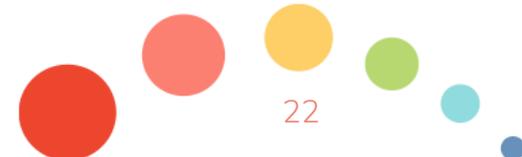
Guetterman TC, Sakakibara R, Baireddy S, Kron FW, Scerbo MW, Cleary JF, Fetters MD
Medical Students’ Experiences and Outcomes Using a Virtual Human Simulation to Improve Communication Skills: Mixed Methods Study. J Med Internet Res 2019;21(11):e15459. doi: 10.2196/15459



Example Statistics by QUAL Groups

	...g non-verbal cues (N=26)	...d of Communication (N=13)	...ls to tense situations (N=10)	...ing and communication (N=6)
@18.OpennessDefensiveness, Mean (SD)	0.8 (0.2)	0.8 (0.2)	0.6 (0.4)	0.5 (0.4)
@20.CollaborativeCompetitive, Mean (SD)	0.7 (0.3)	0.7 (0.2)	0.7 (0.3)	0.5 (0.3)
@22.NonVerbalCommunication, Mean (SD)	0.8 (0.2)	0.8 (0.1)	0.7 (0.4)	0.5 (0.4)
@24.Presence, Mean (SD)	0.8 (0.2)	0.9 (0.2)	0.7 (0.4)	0.6 (0.4)
Global, Mean (SD)	0.8 (0.2)	0.8 (0.1)	0.7 (0.3)	0.5 (0.4)
N = Documents	26 (47.3%)	13 (23.6%)	10 (18.2%)	6 (10.9%)

- Merging by relating quantitative to qualitative results
- Array statistics by qualitatively different groups
- Use qualitative codes to identify groups (e.g., types in a typology)
- Present descriptive statistics for groups



Tips for visual tools

- Consider unit of analysis – a case/document, across documents
- Code matrix browser and code relations browser helpful for seeing patterns across documents
- Some tools (document comparison chart, portrait) need color coding established for codes
- For some tools (e.g., document comparison chart, codeline) the structure and order of data collection is more important