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Director of Continuing Education
Center for Learning
Disclosures

- The speaker has no relevant or commercial interest in any material presented in this lecture.

- This speaker is being support by Virtua.
Purposes

➢ To provide useful strategies to craft “great” questions for surveys.

➢ To foster awareness of current evidenced-based strategies to best illicit and maximize survey response rates using the Tailored Design Method.
Learning outcome

- In 3 months the participants will self-report that they have used at least one new strategy from this concurrent session in their practice.
- Please email me at spolitsky@virtua.org
SERVING UP SURVEYS: MAXIMIZE YOUR RESPONSE RATES

Association for Nursing Professional Development
2017 Annual Convention ~ New Orleans, LA

Sue Politsky PhD, RN, NE-BC
Director of Continuing Education
Center for Learning - Virtua
On-line survey development
Crafting great questions
Do you ALWAYS complete the survey?

Yes

No

I have NEVER received an... Start the presentation to activate live content

If you see this message in presentation mode, install the add-in or get help at PollEv.com/app
Are you currently considering creating a survey for your school?
Have you ever participated in a survey because of the incentives offered?

Yes

No

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CRAFTING GREAT QUESTIONS

Part I
Chapter I
- Background
- Statement of the problem
- Purpose of the study
- Research Question
- Hypothesis
- Definition of terms
- Conceptual models
- Assumptions of study
- Significance of the study

Chapter II
- Review of literature

Chapter III
- Methodology
- Research design
- Sample and setting
- Instrumentation
- Protection of the rights of human subjects
- Data collection procedures
- Data analysis
- Delimitations
What is an acceptable response rate?

- 75% to 100%
- > 50% but less than 75%
- 25% to 50%
- Less than 25%

Start the presentation to activate live content.
Survey response rates

- Internal surveys can yield 30 to 40%
- External surveys can yield 10 to 15%
- Remember: It’s a rate, not an N
Sample size

- Minimum number of subjects
- Compute a priori power of analysis
  - Level of significance (.05)
  - Power (.80)
  - Effect size (.13)
Outcomes of statistical decision making

The actual situation is that the null hypothesis is:

<table>
<thead>
<tr>
<th></th>
<th>True</th>
<th>False</th>
</tr>
</thead>
<tbody>
<tr>
<td>Negative (Not Pregnant)</td>
<td>True (Null accepted)</td>
<td>Correct Decision</td>
</tr>
<tr>
<td></td>
<td>Correct Decision</td>
<td>Type II error (False Negative) Pregnant but don’t know it</td>
</tr>
<tr>
<td>Positive (Pregnant)</td>
<td>False (Null rejected)</td>
<td>Correct decision</td>
</tr>
<tr>
<td></td>
<td>Type I error (False Positive) Not really pregnant</td>
<td>Correct decision</td>
</tr>
</tbody>
</table>

(The researcher calculates a test statistic and decides that the null hypothesis is: (Polit & Beck, 2018))
Levels of measurement

Nominal

- Involves using numbers simply to categorize lists; no quantitative meaning
- Example: Gender
- Male = 1, female = 2
- Median or mode

Ordinal

- Ranks people on attributes
- Example: ADLs, Braden Scores
- Completely dependent = 1, Needs assistance = 2, Needs mechanical assistance = 3, and Completely independent = 4
- Mean, median, mode & SD
Levels of measurement

**Interval**
- Occurs when researchers can rank people on attributes *and* specify distance between them (no absolute zero)
- Example: Temperatures, levels of anxiety
- The difference between a temperature of 140 and 120 is equivalent to the difference between 120 and 100.
- Mean, median, mode & SD

**Ratio**
- Have a meaningful zero and provide information about the absolute magnitude of the attribute
- Example: Wealth
- Someone who has $100 is twice as wealthy as someone who has $50.
- Mean, median, mode, SD and coefficients of variations
Nominal questions

➢ What is your marital status?
  ▪ Divorced
  ▪ Married
  ▪ Never married
  ▪ Partnered
  ▪ Separated
  ▪ Widowed
**Ordinal questions (scales)**

- How likely are you to register for the 2018 ANPD Conference?
  - Unlikely
  - Not very likely
  - Likely
  - Very likely

<table>
<thead>
<tr>
<th>Unlikely</th>
<th>Not very likely</th>
<th>Likely</th>
<th>Very likely</th>
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</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
</tbody>
</table>

- [ ]
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### Interval questions

- What is your anxiety level when flying in turbulence?

<table>
<thead>
<tr>
<th></th>
<th>Not present</th>
<th>Mild</th>
<th>Moderate</th>
<th>Severe</th>
<th>Very Severe</th>
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<tbody>
<tr>
<td>Anxiety level</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
</tbody>
</table>

- [ ]
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Ratio questions

What percentage of your take home salary do you deposit into your savings account?

<table>
<thead>
<tr>
<th></th>
<th>0</th>
<th>&gt; 0 but &lt; than 25%</th>
<th>25% but &lt; than 50%</th>
<th>50% but &lt; 75%</th>
<th>75% but &lt; 100%</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
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</table>
Crafting the great questions

Three essentials for the participants:

- Willing to answer
- Respond to accurately
- Interpret in the way the researcher intends
First...write research question

➤ Concepts will flow from here
  ▪ Break it down
    • Domains
      • Subdomains

Qualitative vs. quantitative
Valid questions

- Skipped questions
- Erroneously answered
- Skewed results – unreliable responses
How to “Ace” survey creations

The survey must:

- Be easy to read & understandable
- Instructions are present
- All possible responses are present
- Limit personal information requested
- Avoid/limit questions that are embarrassing or threatening
- No double- or tripled barreled questions
- Questions are technically accurate
- Use simple and familiar words
The anatomy of the survey question

- **Question stem**
- **Additional instructions, definition, or examples**
  - “Select all that apply”
  - “Please round to the nearest whole number”
  - A nurse resident is a nurse who has worked in acute care for less than 1 year.
- **Each question has spaces for choices/answer(s)**
- **Answer choices are limited to the available possibilities from which respondents can choose**
  - “Very satisfied, somewhat satisfied, etc..."
Open-ended questions

- Allows the respondents to formulate their answers how they want
- Involves a blank space or box
- Used to collect rich, detailed information
- Numerical values

Example:
- Describe the time when you encountered your first patient death?
Open-ended questions

- More likely to skip
  - Mobile device
- If answered, only short response or response that doesn’t answer the question
- Code then analyze then interpret
Writing open-ended questions

- Descriptive
- Specify the type of response desired in the question stem
- Example:
  - In an average week, how many times are you assigned to Charge Nurse?
    - Some possible responses may be:
      - “Most of the time”
      - “Rarely”
      - “Mondays, Wednesday, and Fridays”
    - In an average week, how many **days** are you assigned to Charge Nurse?
Avoid making respondents calculate sums

- Times, percentages that must sum to a total, provide an automatic calculation tool.
- Example: What percentage of time do you spend on the tasks during a typical 12 hour work day?

<table>
<thead>
<tr>
<th>Task</th>
<th>Percentage</th>
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<tbody>
<tr>
<td>Assessment</td>
<td>25%</td>
</tr>
<tr>
<td>Breaks</td>
<td>10%</td>
</tr>
<tr>
<td>Documentation</td>
<td>20%</td>
</tr>
<tr>
<td>Medication administration</td>
<td>20%</td>
</tr>
<tr>
<td>Rounding</td>
<td>10%</td>
</tr>
<tr>
<td>Washing hands</td>
<td>25%</td>
</tr>
</tbody>
</table>

**TOTAL:** 100%
And the researcher include open ended questions early on or later in the survey.

Early on

Later

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Nondirective probes

Q 1: What continuing education topics would you like to see offered next year?

Probe: Are there any others?

1) Non-directive or neutral
2) Type strongly impacts amount and type of information received

- Are there any others vs. tell me more about that?
Close-ended questions

- List of categories to choose from
- Include both side choices
- Include all *reasonable possible* answers
  - “Don’t know”
  - “No opinion”
  - “Undecided”

- Are they the most accurate or the easiest way out?
  - Consider whether or not these options should be provided for each question.
    - There is support for both sides.
Close-ended questions

- Mutually exclusive
  - No overlaps
  - Example: What was your average household income for 2016?

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<thead>
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<tbody>
<tr>
<td></td>
<td>Less than $10,000</td>
<td>$10,000 to $19,999</td>
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<td></td>
<td></td>
<td>$20,000 to $29,999</td>
</tr>
<tr>
<td></td>
<td>Less than $10,000</td>
<td>$10,000 to $20,000</td>
</tr>
<tr>
<td></td>
<td></td>
<td>$20,000 to $30,000</td>
</tr>
</tbody>
</table>
Close-ended questions

- Visual analog scale (slider scale)
  - Example: Overall, indicate how much pain you are experiencing at the present time?

- Scales presented vertically or horizontally
  - Example: Which attribute is MOST important when selecting new employment?

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<table>
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<tbody>
<tr>
<td>Continuing education opportunities</td>
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<tr>
<td>Nurse: Patient ratios</td>
<td></td>
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<tr>
<td>Salary</td>
<td></td>
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<tr>
<td>Tuition reimbursement</td>
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</tbody>
</table>
Partially closed-ended questions

- Hybrid of an open- and closed-ended question that includes an “other” response
- Example: Which area best describes your specialty area?
  - Behavioral Health
  - Critical Care (ICU or PCU)
  - Emergency Department
  - Home Care
  - Mother-Baby
  - Long Term Care
  - Pediatrics
  - Surgical Services
  - Other:
Close-ended questions

- Drop-down menu
  - Cannot view answers unless you click on the menu

- Example: Which option best describes your travel arrangements for attending ANPD 2017?

- Click here
Consider using “logic”
Do you hold a national specialty certification?

- Yes
  - (Here is the logic, if yes then go to question #___)

- No
  - What preparation strategies did you use before taking your national certification exam? (Select all that apply)
    - Certification review course
    - No formal or informal strategies
    - Self study
    - Study partners

- Advance to the next questions
Limit wording

- Due to the fact ........................................... Because
- At this point in time ................................. Now
- A small number of ................................. A few
- A considerable number of ...................... Many
- Small in size ........................................... Small
- As the ability .......................................... Can
- Ascertain the location of ....................... Locate
- Concerning the matter of ...................... If
- Make a decision ...................................... Decide
Yes and no questions

- Make sure “yes” means yes and “no” means no

- Avoid double negatives
  - Example:
  - “Should nurse directors NOT take patient-care assignments?”
    - Yes
    - No
    - Do you favor or oppose allowing nurse directors to take patient-care assignments?
      - Favor
      - Oppose
Only ask questions that you intend to change

➢ Avoid asking questions that you do NOT plan on acting upon
➢ When things are NOT changed, may be interpreted as you are not listening

- Example:
- Was the temperature satisfactory during your participation at the conference?
  - Yes
  - No
Avoid questions you already know the answer

- Avoid damaging the relationship with asking these types possible demographic questions

- Example:
  - What is your name?
  - Email address?
  - Etc...
Order question

- Group related questions that cover similar topics together
- Begin with questions likely to be salient to nearly all respondents and choose the first question carefully
- Place sensitive or potentially objectionable questions near the end of the questionnaire
- Ask questions about events in the order the events occurred
Conduct a small pilot
ONLINE SURVEY DEVELOPMENT

Part II
Types of surveys

- Telephone questionnaires
- Mail questionnaires
- Web questionnaires
- Mixed-mode questionnaires
Web Questionnaires

➢ Benefits
  ▪ Speed
  ▪ Low cost
  ▪ Large number of people

➢ Barriers
  ▪ Mobile devices – smaller screens
  ▪ Scan e-mails on phone – f/o later
Beware of Instant Gratification

The History of the Mobile Phone
Considerations

- Specific URL allows access (Identification code)
  - https://www.surveymonkey.com/r/ANPD2017

- QR codes (quick response code) – matrix barcode that can be scanned
  - http://www.qrstuff.com/
Evaluate the technological capabilities of the survey population

- Unfamiliarity with completing web surveys
- Lower education
- Slow speed of internet connection

- Require more instruction or even another mode of response
Survey display

➤ Challenges

- Wide variation in how respondents might experience any given web survey
- Multiple devices – varying screen size & range of memory
- Constant release of updates & new plug ins
- Personal customization of settings
Number of questions & arrangement

➤ One question per page
  ▪ Responses saved each time “next”
  ▪ Gives more control
  ▪ Submitted responses are stored on server
    • Chose not to complete
  ▪ Allows for more interactive capabilities
    • Branching to f/o questions

➤ Most common format for web surveys
Number of questions & arrangement

- All questions on one page
  - Approximates a paper survey
  - Can preview the entire questionnaire before answering
  - More informed decision about completing
  - Limitations
    - Scrolling may miss a question or sets of questions
    - Difficult to view on mobile device
    - Not submitted until end – potential to lose data
Number of questions & arrangement

➤ Multiple questions on one page
  ▪ Used to group related questions
  ▪ Used for questions that use a common scale format
  ▪ Mobile devices – limit to three questions per page
  ▪ Benefits
    • Reduces # of pages to scroll
    • Higher correlation among answers across the question
Do not include a graphical progress bar
Allow respondents to stop and complete at later time
Establishes a connection between the surveyor and the participant

E-mails difficult to personalize
  - Mass produced

Appearance of name in subject line – Possible spam

Write it for a business acquaintance
  - Legitimate and appropriate

Bystander effect
  - Email address in their “To” field
    • Flagged as spam
Collect Paradata

Collected on each respondent for each question:

- How long it takes to answer each question
- Whether or how answers are changed
- Sequence of clicks made on each page
Incentives

- **Options**
  - Electronic gift certificates
  - Gift certificates
  - Money through PayPal

- **Limitations**
  - Redeeming incentives
  - Charges with PayPal
  - Time, effort, & knowledge
  - Additional costs
  - Lottery or prize drawing (not as effective as traditional cash or material incentives)
    - Receive immediately following completion – improved

- **Cash incentive** – most effective at increasing response rates in all survey modes
Use of incentives

- Are incentives appropriate for your study?
- Can incentives exert undue influence on study participants?
E-Mail: Use multiple contacts and vary the message across them

- One of the most effective ways to increase response rates is to send multiple contacts to potential web participants

- **Sequence**
  - Initial e-mail invitation
  - Pre-notice (rarely used)
  - Follow-up e-mails

- **Consideration**
  - Answer: What have been your gains with f/o e-mails?
  - Your answer to this question should suggest 2\textsuperscript{nd}, 3\textsuperscript{rd} etc..
  - Irritate sample members
Use multiple contacts and vary the message across them

- Content should parallel other modes
  - Original e-mail
    - Clearly state what is being asked of respondents
    - Why they were selected
    - What the survey is about
    - Who is conducting it
    - How sample members can contact someone to get any questions answered
    - Statement that data will be kept confidential
    - Information how to access the survey (including a URL link)
Carefully & strategically time all contacts with the population in mind

- 1st e-mail reminder
  - Explain that a survey invitation was sent
  - Thank those who have responded
  - Ask those to respond who have not done so yet

- Additional follow-up e-mails should be personalized
  - “We’ve not heard from you”
  - Emphasize the importance of the recipient's response
  - Important to remove those who have already responded
Time all contacts with the population in mind

➢ Timing is important to the overall effect
  ▪ Give adequate time to respond before reminders arrive
  ▪ Waiting to send reminders gives surveyor opportunities to address problems
  ▪ Do not allow so much time to pass that initial requests are forgotten

➢ Optimal timing sequence varies (goals, needs, and population)

➢ Avoid rapid-fire sequencing e-mails

➢ Time of day – on Monday, early in am before day starts
Keep e-mail contacts short and to the point

- Goal: short and engaging
- Mobile devices – 1st few lines
  - Highlight key information
    - Sponsor
    - Topic
    - Any incentive
    - Link to survey
  - Some of the key information can be part of the sender address or subject line
- Important to include the survey link as early in e-mail as possible
- Consider shortening the URL to reduce space on the screen
Take steps to ensure that e-mails are not flagged as spam

- “junk” or “bulk”
- Spam – unsolicited bulk messages for which there is no preexisting relationship between the sender and recipient)

Spam poses potential problems for surveyors
  - E-mail contacts being labeled as spam

Possible resolutions:
Take steps to ensure that e-mails are not flagged as spam (continued)

- Possible resolutions:
  - Talk to Internet service provider or survey vendor
    - Internet protocol (IP) address surveyor will be sending from is not already flagged as spam
    - Use plain text communications rather than HTML messages
    - Send individual e-mails rather than bulk
    - Do not use “CC” or “BCC” fields
    - Avoid words such as offer, free, cash, win, promo, prize, and so on.
  - Time sensitive – quickly out of date – research spam filters close to the time of doing your surveys
Each sample member has a unique ID #

- This is automatic
- Researcher can provide unique access code required in order to enter the web survey
- Protects the integrity of the sample
- Ensures each respondents answers survey only once
  - The access code can be deactivated after respondent submits the completed survey
Other considerations:

- Not completing survey in one sitting
  - Do not deactivate
  - Allow them to reenter survey where they stopped
  - After responses are submitted, then deactivate their access code

- Manual vs. automatic log in
  - *Manual log in:
    - Respondents are sent the URL
    - They key in their access code to gain entrance into survey
  - Automatic log in
    - The unique access code is contained within the URL so entering the URL into their browser will gain them access to survey
Limitations
- Exceed capabilities of the web server(s)
  - Bog down/crash

Recommendations
- Do not send out e-mail survey invitations or reminders to the entire sample at one time
  - Bounce-back
- Except for small samples
- Send e-mails communications in batches of a few hundred at a time over the course of the day, in the late evening

Consider effects of incoming surveys
Other considerations

➢ Place demographics at the end of survey
References


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