Open Research Online

The Open University's repository of research publications
and other research outputs

A practical guide to the systematic application of nominal group technique.

Journal Item

oro.open.ac.uk

Title	A practical guide to the systematic application of Nominal Group Technique

Authors

Dr Rosemary F Mullen	BN (Hons), MEd, PhD	Lecturer
		School of Nursing and Health Care, University of Glasgow, 59-61 Oakfield Avenue, Glasgow, G12 8LL.
		Tel.: 0141 330 7153/07868 058821
		rosemary.mullen.2@glasgow.ac.uk
Dr Angela Kydd	MSc, PhD	Clinical Professor in Nursing, Robert Gordon University.
		a.kydd@rgu.ac.uk
Dr Anne Fleming	BA, MSc, PhD	Independent researcher
		afm.fleming@btinternet.com
Dr Laura McMillan	BSc, PhD	Clinical Educator, Norfolk and Waveney Health and Care Partnership.
		laura.mcmillan@nchc.nhs.uk

Keywords

Nominal Group Technique (NGT); focus groups; Q methodology; research methods; consensus; data collection

Background

Nominal group technique (NGT) is a highly structured approach used to explore areas of interest and develop consensus. With its focus on problem exploration and group decision-making, NGT is a common method for consensus development but is, at times, conflated with focus group methods.

Aim

To examine the systematic application of NGT in a doctoral Q-methodology study exploring nursing student perspectives on preserving dignity in care.

Discussion

The paper begins by outlining NGT and distinguishing it from focus group methods. A step-by-step guide to NGT is provided, with each step illustrated by its practical application in the doctoral study. The paper also shares the lessons learned around the limitations and strengths of NGT in the context of this study.

Conclusion

Key similarities and differences between NGT and focus group methods are identified. The potential of NGT as an approach to exploring shared perceptions and developing consensus is highlighted.

Implications for practice

When applied systematically, NGT enables healthcare researchers to collaborate in a meaningful and engaging way with participants and generate tangible outcomes within a relatively short space of time.

1 Background

NGT may be defined as a highly structured approach used to explore areas of interest and develop consensus (Durkin et al., 2019). The groups are 'nominal' because participants work in a group setting, but the emphasis is on gathering individual views (MacPhail, 2001; Milnes et al., 2013).

Originally developed to assist in healthcare planning (Van de Ven and Delbecq, 1972), NGT has since been applied to diverse problems ranging from identifying key performance indicators for care (McCance et al., 2012) and the professional development needs of newly qualified nurses (Gorman and McDowell, 2018), to nursing handover (Klim et al., 2013), research prioritisation (Wilkes et al., 2013) and educational evaluation (Cunningham, 2017).

NGT is often discussed in relation to key stages such as the four summarised below in in Figure **1** (Kennedy and Clinton, 2009).
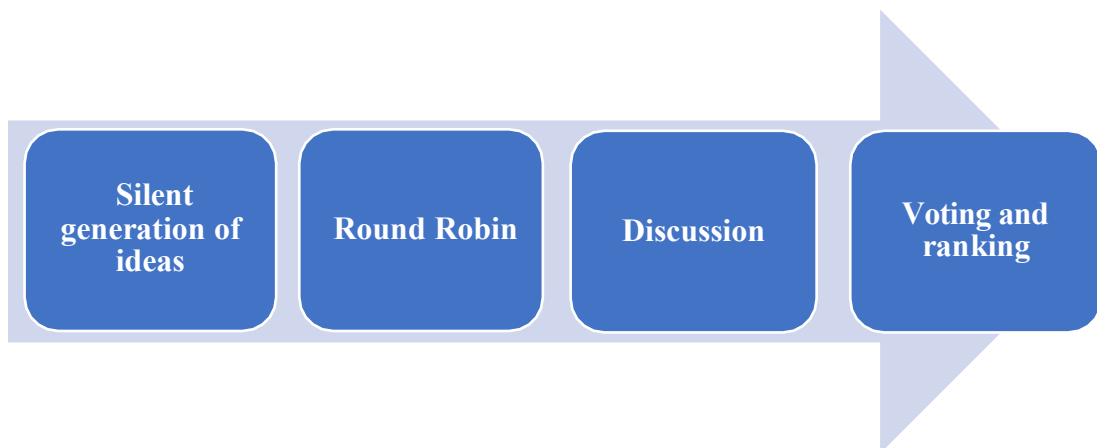

Figure 1: Stages of NGT

At the first stage, participants are introduced to the topic and invited to engage in a 'silent generation of ideas' for around ten minutes (Van de Ven and Delbecq, 1972). Next, at the second stage, each participant is invited in-turn to share one of their ideas with the rest of the group in a 'Round Robin' format (Warder, 2001). There may be clarification of ideas at this stage to allow them to be listed but, again, there is no discussion (Harvey and Holmes, 2012). Each idea is recorded and displayed – usually on flip chart paper – by a facilitator until all ideas have been listed (Perry and Linsley, 2006). These ideas are then discussed briefly at the third stage for the purpose of

clarification or removal of duplication (Kennedy and McKay, 2011). The fourth and final stage involves the participants voting on and ranking the ideas listed by the group (Dening et al., 2013).

2　NGT and focus group approaches

Similarities between focus groups and NGT have led some to argue that the latter can be used in the context of a focus group and is in itself a form of focus group (Warder, 2001; Massey, 2011; Cooke and Thackray, 2012). Others distinguish NGT explicitly from focus groups (MacPhail, 2001; Hickey and Chambers, 2014). While there are several similarities between focus groups and NGT, some key differences make it reasonable to assert that they should not be conflated (Table **1**). Interestingly, Varga-Atkins et al. (2017) suggest that combining both methods in two distinct stages has the potential to harness their respective strengths.

Table 1 Similarities and differences

	Similarities	Differences
Purpose	• Exploration of participants' views on a topic of interest (Morgan and Krueger, 1993)	• NGT aims to reach consensus while focus groups are not recommended for this purpose (Morgan and Krueger, 1993; Krueger, 2000; Allen et al., 2004).
Structure	• Use of small groups of similar participants in a relaxed and non-threatening environment (Harvey and Holmes, 2012; Doody et al., 2013).	• The highly structured nature of the NGT is designed to democratise the group by providing a more equal opportunity for each participant to consider and share their individual response, and avoid discussion being dominated by any individual or sub-group (Porter, 2013; Durkin et al., 2019).

Process	• The role of a facilitator (Morgan, 1993; Redmond and Curtis, 2009; Hickey and Chambers, 2014).	• In NGT, the role of the facilitator is more administrative because of its highly structured nature and limited opportunity for group discussion (O'Neil and Jackson, 1983; Carney et al., 1996; Kennedy and Clinton, 2009; Porter, 2013).
Recording	• The use of audio-recording and transcription often described (Cunningham, 2017; Bellenger et al., 2019; Tsourtos et al., 2019). • Field notes may be used to facilitate the researcher's reflection on the process (Gray et al., 2017; Gorman and McDowell, 2018).	• In NGT, the lists and rankings produced during the Round Robin and voting stages may form the only recordings required (Van de Ven and Delbecq, 1972; Harvey and Holmes, 2012; Porter, 2013).
Analysis	• Thematic and content analysis methods of data analysis are commonly described (Barbour, 2014; McMillan et al., 2014).	• The structure of the NGT is such that the researcher is able to leave the group setting with much of the data analysed already and, perhaps most importantly, analysed by the participants themselves (Aveyard et al., 2005; Porter, 2013).

4   NGT in practice

4.1   Overview of the example study

Following ethical approval, nursing students were recruited from each year of a three-year undergraduate preregistration adult nursing programme in Scotland to participate in a two-strand Q methodology doctoral study exploring perceptions of dignity in care (Mullen, 2019). A total of 31 nursing students participated in the first strand which employed photo-elicitation and Nominal Group Technique (NGT). Each participant provided informed consent and attended one of five, year-specific nominal groups lasting around one hour. During each nominal group, participants were invited to complete a response booklet by answering the three questions shown in Table 2. No recordings were made other than the response booklets, lists and rankings generated during the nominal groups and the researcher's brief field notes.

In Q methodology, data collection requires the development of a data collection tool which is representative of the participants' views and expressed in naturalistic language (McKeown and Thomas, 2013). The use of NGT to develop such tools is well-established in Q methodology (Valaitis et al., 2011; McKeown and Thomas, 2013). In addition, Durkin et al. (2019) suggest that NGT is an appropriate research method when the topic of interest is clarity around subjective terms which fits well with the example study's focus on the concept of dignity. In the example study, NGT helped identify a total of 141 statements clarifying participants' perceptions of the personal and environmental influences on dignity in care. These 141 statements formed the basis of the data collection tool for example study's second strand (Mullen, 2019).

Table 2: Response booklet questions

Question 1 (Q1)

Please take a few moments and select an image that captures something of what dignity in care means to you. Jot down what it was about the image that captured something of that meaning for you:

Question 2 (Q2)

Please think about a situation you experienced while on placement in which dignity was promoted. Was there anything in particular about the people involved that helped promote it? Bullet point a list of your ideas below:

Question 3 (Q3)

Please think about a situation you experienced while on placement in which dignity was promoted. Was there anything in particular about the place that helped promote it? Bullet point a list of your ideas below:

4.2 Introducing NGT to participants

During the introduction, participants were thanked for their attendance and reminded of the voluntary nature of participation, and that they could withdraw at any time. Participants were also reminded that their anonymity would be protected and asked not to share with anyone else something another participant shared with the group. Participants were further advised that the researcher would be available to them on an individual basis after the group to discuss any issues raised in more detail. More generally, the introduction outlined briefly the process and the Response Booklet. To help groups keep to time, participants were encouraged to use brief bullet points in the booklet and were advised that they could move through it at their own pace. The researcher also explained that silence was valued at the silent generation stage, but there would be some time for discussion at other stages.

4.3 Stage 1: Silent generation of ideas

Lasting around thirty minutes, this stage was the longest one in the process. During this stage, participants were invited to respond to the three questions in the Response Booklet as shown in Figure 2. Photo-elicitation – using pre-existing images from a

suite of images, printed on cards, entitled "Envision" (NHS Education for Scotland, 2012) – was employed to obtain insight into the meaning of dignity and as a trigger for the subsequent stages (Mullen et al., 2019).

4.4   Stage 2: 'Round Robin'

This stage lasted around 15 minutes. The process was explained and all the participants, in turn, provided a single statement from their responses to Q1 and then Q2 until everyone had exhausted their lists. Each statement was numbered as the researcher recorded them on a flip chart. Every effort was made to record the statements verbatim, although some were abbreviated or condensed in agreement with the participants who offered them. As flip chart pages became full, they were posted on the walls so that the participants could still see them.

On one occasion, the researcher was aware that two participants were not offering the ideas as listed in their response booklets. Subsequent review of the responses in their booklets suggested that these participants had provided detail about their specific situations in the booklet rather than statements related to people or place. However, the detail of the situation had still enabled the participants to extract specific statements to add to the flip charts during this stage. The number of statements – such as *'Involving families'*, *'Helping give back confidence'* and *'Remembering they're a person not a bunch of conditions'* – generated per group at this stage ranged from 24 to 31.

4.5   Stage 3: Discussion

This stage was brief – lasting around five minutes – mainly because there seemed to be little overlap in the statements raised but also because of time constraints. Participants were invited to consider the statements recorded on the flip charts as follows and to identify any statements they did not understand, were unsure of, or needed to hear more about. Clarification was not sought on any of the statements by the group.

At times, generic statements were offered, such as *"A focus on quality improvement"* and *"Valuing the individual"*. Some effort was made to clarify in practical terms what the participants meant by these by asking how these were made evident. However, the researcher was conscious of her role as a facilitator using NGT, described by

O'Neil and Jackson (1983, p. 131) as a "neutral receiver of ideas". Similarly, Carney et al. (1996, p. 1026) stress that the role of the facilitator is "not to lead the discussion but to ensure the smooth running of the group". Therefore, clarification was not pursued if not immediately forthcoming. In any case, generic statements were relatively unusual, perhaps because of the emphasis placed during the introduction on identifying the practical ways in which dignity was promoted. Therefore, most statements listed on the flip chart remained largely unchanged for the next stage.

4.6   Stage 4: Voting and ranking

This stage lasted around 15 minutes. Participants were invited to consider the flip chart lists and select the five statements that seemed most important to them. They were then asked to write the number of each of these statements down; each one on a separate card. Participants all appeared to select their 'Top 5' quickly in around 5 minutes. However, participants expressed more difficulty with ranking each of the five in order of priority – from one for the least important to five for the most important – and this stage took around ten minutes to complete.

The voting cards were then collected, and the scores recorded on the flip charts beside the relevant statements. The scores for each statement were then added together to give a total score for each statement. This enabled the participants in each group to identify their group's 'Top 5' priorities as reflected by the sum of scores. To illustrate this process, the number of votes, together with their scores and group rankings, for the 'Top 5' statements identified by one of the groups are provided in Table 3.

Table 3 Example of 'Top 5'

Statement	Number of Votes	Scores	Sum of scores	Group ranking
Remembering they're a person, not a bunch of conditions	6	3, 4, 5, 5, 5, 5	27	1st
Treating as an individual	5	2, 3, 3, 5, 5	18	2nd
Genuine interest and listening	5	1, 3, 3, 3, 5	15	= 3rd
Being honest	5	1, 2, 3, 4, 5	15	= 3rd
Giving informed choices	4	1, 3, 4, 5	13	= 4th
Keeping covered as much as possible	4	2, 2, 4, 5	13	= 4th
Never leaving in a vulnerable position	3	4, 4, 4	12	5th

4.7 Concluding each nominal group

This stage was brief and lasted no longer than five minutes. The participants and researcher viewed the statements receiving the most votes and the highest scoring statements for the group. Each group indicated their agreement with the voting and ranking and expressed their interest in the results. One of the benefits of using NGT is the opportunity it offers participants to generate tangible outcomes within a relatively short space of time (de Wolf-Linder et al., 2019). Each group was able to identify their 'Top 5' priorities by votes awarded and by total score while still in the group setting. Harvey and Holmes (2012) and McCance et al. (2012) each stress the importance of completing and sharing results with the group at the time. The participants were thanked for their attendance and for their interesting and valuable contributions. They were also invited to contact the researcher if they wished to discuss any aspect of the process or any issues raised by the situations they had considered.

10

4.8   Data analysis and multiple nominal groups

By the fifth and final nominal group, consistent priorities were apparent and theoretical sufficiency as described by Gray et al. (2017) appeared to have been achieved. To allow comparisons to be made between the multiple nominal groups, however, further analysis is recommended even when the sample size is small (Gaskin, 2008; McMillan et al., 2014). More importantly, the researcher was keen to enhance her familiarity with the data and further analysis seemed to be a useful means of doing that. Viewing the data in different enabled more active engagement with the data and greater ability to compare different groups.

Methods for further analysis identified by NGT studies range from thematic analysis (Kennedy and Clinton, 2009; Cooke and Thackray, 2012) to grounded theory coding (Iliffe et al., 2005; Sanderson et al., 2012) and content analysis (Dening et al., 2013; Klim et al., 2013). In this study, qualitative and quantitative content analysis were used to further analyse the NGT data. The resulting categories were then ranked in order of frequency and importance using a systematic approach described by van Breda (2005). This enabled the researcher to explore the frequency with which different categories of statements were identified – that is, their popularity – and the strength of feeling among the participants about each category.

5   Limitations and strengths

One of the main limitations related to the use of NGT in the example study was the restriction the highly structured method placed on participants who may have welcomed a greater opportunity to 'tell their story'. Closely related to this was that the researcher under-estimated the power of photo-elicitation as a means of connecting participants with the subject matter and the depth and richness of the data that would be provided. The data served the purpose for which it was intended but could have been explored much further if NGT allowed for greater discussion. In addition, participants in the example study were a self-selected group and, as such, may have shared particular views, making consensus easier to reach. Cooper et al. (2020) highlight lack of reflection time and loss of anonymity as other potential limitations of NGT, but these were not apparent in the example study.

One of the principal benefits of NGT highlighted by its systematic application in the example Q-methodological study was its ability to engage and interest the participants.

Participants informed the researcher that they enjoyed participating in the research and this was observed in their non-verbal communication too. Embedding another active method of data collection – photoelicitation – enhanced this benefit further. In addition, NGT was an efficient and effective means of collecting data and this helped minimise the burden of participation in terms of participants' time. The structure of the NGT – in which participants each have an equal opportunity to share their ideas – meant that each voice was heard. Moreover, NGT provided outcomes that were visible to the participant at the end of each nominal group or Q-sort. For example, NGT participants could observe and discuss the development of consensus as the data was being collected. Moreover, the detailed records provided by the response booklets, votes and rankings helped enhance the trustworthiness confirmability, transferability, and dependability of the NGT findings which, in turn, contributed to the triangulation process for the study overall.

6 Conclusion

This paper highlights the potential of NGT as an approach to exploring shared perceptions and developing consensus and distinguishes it from focus group methods. By illustrating NGT's use in a doctoral study of nursing students' perceptions of dignity in care, this paper describes the significance of its highly structured approach to reaching consensus and offers some practical insight into its application. Notwithstanding the restriction it places on group discussion, NGT offers an opportunity to generate tangible and meaningful outcomes for the researcher and participants within a relatively short space of time. When applied systematically, it enables healthcare researchers to collaborate in a meaningful and engaging way with participants.

7 References

Allen, J., Dyas, J., & Jones, M. (2004). Building consensus in health care: a guide to using the nominal group technique. *British journal of community nursing, 9*(3), 110.

Aveyard, H., Edwards, S., & West, S. (2005). Core topics of health care ethics. The identification of core topics for interprofessional education. *Journal of Interprofessional Care, 19*(1), 63-69. doi:10.1080/13561820400021692

Barbour, R. (2014). Analysing focus groups. In Flick, U. (Ed.), *The SAGE Handbook of Qualitative Data Analysis* (pp. 313-326). Los Angeles: SAGE Publications Ltd.

Bellenger, E. N., Ibrahim, J. E., Kennedy, B., et al. (2019). Prevention of physical restraint use among nursing home residents in Australia: The top three recommendations from experts and stakeholders. *International Journal of Older People Nursing, 14*(1), e12218-n/a. doi:10.1111/opn.12218

Carney, O., McIntosh, J., & Worth, A. (1996). The use of the Nominal Group Technique in research with community nurses. *Journal of Advanced Nursing, 23*(5), 1024-1029. doi:10.1046/j.1365-2648.1996.09623.x

Cooke, M., & Thackray, S. (2012). Differences between community professional and patient perceptions of chronic obstructive pulmonary disease treatment outcomes: a qualitative study. *Journal of Clinical Nursing, 21*(11- 12), 1524-1533. doi:10.1111/j.1365-2702.2012.04094.x

Cooper, S., Cant, R., Luders, E., et al. (2020). The Nominal Group Technique: Generating consensus in nursing research. *Journal of Nursing Education, 59*(2), 65-67. doi:10.3928/01484834-20200122-02

Cunningham, S. (2017). Evaluating a nursing erasmus exchange experience: Reflections on the use and value of the Nominal Group Technique for evaluation. *Nurse Education in Practice, 26*, 68-73. doi:10.1016/j.nepr.2017.07.002

de Wolf-Linder, S., Dawkins, M., Wicks, F., et al. (2019). Which outcome domains are important in palliative care and when? An international expert consensus workshop, using the nominal group technique. *Palliative Medicine, 33*(8), 1058-1068. doi:10.1177/0269216319854154

Dening, K. H., Jones, L., & Sampson, E. L. (2013). Preferences for end-of-life care: A nominal group study of people with dementia and their family carers. *Palliative Medicine, 27*(5), 409-417. doi:10.1177/0269216312464094

Doody, O., Slevin, E., & Taggart, L. (2013). Focus group interviews in nursing research: part 1. *British Journal of Nursing, 22*(1), 16-19.

Durkin, J., Usher, K., & Jackson, D. (2019). Using consensus from experts to inform a shared understanding of subjective terms. *Nurse Researcher, 27*(2), 46-49. doi:10.7748/nr.2019.e1622

Gaskin, S. (2008). Product or Process? A pilot study into the perceptions of research training by PhD students in GEES subjects at three universities. *Planet, 20*(1), 10-20. doi:10.11120/plan.2008.00200010

Gorman, L. L., & McDowell, J. R. S. (2018). Identifying the needs of critical and acute cardiac care nurses within the first two years of practice in Egypt using a nominal group technique. *Nurse Education in Practice, 28*, 127-134. doi:10.1016/j.nepr.2017.10.005

Gray, J., Grove, S. K., & Sutherland, S. (2017). *Burns and Grove's The Practice of Nursing Research: Appraisal, Synthesis, and Generation of Evidence* (8th ed.). St. Louis, Missouri: Elsevier.

Harvey, N., & Holmes, C. A. (2012). Nominal group technique: An effective method for obtaining group consensus: Application of nominal group technique. *International Journal of Nursing Practice, 18*(2), 188-194. doi:10.1111/j.1440-172X.2012.02017.x

Hickey, G., & Chambers, M. (2014). Reaching a consensus on service-user involvement in courses for professionals. *Nurse Researcher, 21*(6), 22.

Iliffe, S., De Lepeleire, J., van Hout, H., et al. (2005). Understanding obstacles to the recognition of and response to dementia in different European countries: A modified focus group approach using multinational, multi-disciplinary expert groups. *Aging & Mental Health, 9*(1), 1-6. doi:10.1080/13607860412331323791

Kennedy, A., & Clinton, C. (2009). Identifying the professional development needs of early career teachers in Scotland using nominal group technique. *Teacher Development, 13*(1), 29-41. doi:10.1080/13664530902858485

Kennedy, A., & McKay, J. (2011). Beyond induction: the continuing professional development needs of early-career teachers in Scotland. *Professional Development in Education, 37*(4), 551-569. doi:10.1080/19415257.2010.533598

Klim, S., Kelly, A. M., Kerr, D., et al. (2013). Developing a framework for nursing handover in the emergency department: an individualised and systematic approach. *Journal of Clinical Nursing, 22*(15-16), 2233-2243. doi:10.1111/jocn.12274

Krueger, R. A., & Casey, M.A. . (2000). *Focus Groups: A Practical Guide for Applied Research* (3rd ed.). London: Sage Publications Ltd.

MacPhail, A. (2001). Nominal Group Technique: A Useful Method for Working with Young People. *British Educational Research Journal, 27*(2), 161-170. doi:10.1080/01411920120037117

Massey, O. T. (2011). A proposed model for the analysis and interpretation of focus groups in evaluation research. *Evaluation and Program Planning, 34*(1), 21-28. doi:10.1016/j.evalprogplan.2010.06.003

McCance, T., Telford, L., Wilson, J., et al. (2012). Identifying key performance indicators for nursing and midwifery care using a consensus approach. *Journal of Clinical Nursing, 21*(7- 8), 1145-1154. doi:10.1111/j.1365-2702.2011.03820.x

McKeown, B., & Thomas, D. B. (2013). *Quantitative Applications in the Social Sciences: Q methodology.*(2nd ed.). doi:10.4135/9781483384412

McMillan, S. S., Kelly, F., Sav, A., et al. (2014). Using the Nominal Group Technique: how to analyse across multiple groups. *Health Services and Outcomes Research Methodology, 14*(3), 92-108. doi:10.1007/s10742-014-0121-1

Milnes, L. J., McGowan, L., Campbell, M., et al. (2013). Developing an intervention to promote young people's participation in asthma review consultations with practice nurses. *Journal of Advanced Nursing, 69*(1), 91-101. doi:10.1111/j.1365-2648.2012.05993.x

Morgan, D., & Krueger, R. (1993). When to use focus groups and why. In Morgan, D. (Ed.), *Successful Focus Groups: Advancing the State of the Art* (pp. 3-19). Thousand Oaks, CA: SAGE Publications, Inc.

Morgan, D. L. (1993). *Successful Focus Groups: Advancing the State of the Art*. London: SAGE.

Mullen, R. F. (2019). *Exploring nursing students' perspectives on preserving dignity in care : a mixed methods Q-methodology study.* (PhD). Edinburgh Napier University, Retrieved from https://ethos.bl.uk/OrderDetails.do?uin=uk.bl.ethos.787459

Mullen, R. F., Kydd, A., Fleming, A., et al. (2019). Dignity in nursing care: What does it mean to nursing students? *Nursing Ethics, 26*(2), 390-404. doi:10.1177/0969733017720825

NHS Education for Scotland. (2012). Envision. Retrieved from http://nes.scot.nhs.uk/education-and-training/by-discipline/nursing-and-midwifery/resources/publications/valuing-feedback-envision-cards.aspx

O'Neil, M. J., & Jackson, L. (1983). Nominal Group Technique: A process for initiating curriculum development in higher education. *Studies in Higher Education, 8*(2), 129-138. doi:10.1080/03075078312331378994

Perry, J., & Linsley, S. (2006). The use of the nominal group technique as an evaluative tool in the teaching and summative assessment of the inter-personal skills of student mental health nurses. *Nurse Education Today, 26*(4), 346-353. doi:10.1016/j.nedt.2005.11.004

Porter, J. (2013). Be careful how you ask! Using focus groups and nominal group technique to explore the barriers to learning. *International Journal of Research & Method in Education, 36*(1), 33-51. doi:10.1080/1743727X.2012.675554

Redmond, R., & Curtis, E. (2009). Focus groups: principles and process. *Nurse Researcher, 16*(3), 57.

Sanderson, T., Hewlett, S., Richards, P., et al. (2012). Utilizing Qualitative Data from Nominal Groups: Exploring the Influences on Treatment Outcome Prioritization with Rheumatoid Arthritis Patients. *Journal of Health Psychology, 17*(1), 132-142. doi:10.1177/1359105311410758

Tsourtos, G., Foley, K., Ward, P., et al. (2019). Using a nominal group technique to approach consensus on a resilience intervention for smoking cessation in a lower socioeconomic population. *BMC Public Health, 19*(1), 1577-1515. doi:10.1186/s12889-019-7939-y

Valaitis, R. K., Akhtar- Danesh, N., Brooks, F., et al. (2011). Online communities of practice as a communication resource for community health nurses working

with homeless persons. *Journal of Advanced Nursing, 67*(6), 1273-1284. doi:10.1111/j.1365-2648.2010.05582.x

van Breda, A. D. (2005). Steps to analysing multiple group NGT data. *The Social Work Practitioner-Researcher, 17*(1), 1-14.

Van de Ven, A. H., & Delbecq, A. L. (1972). The nominal group as a research instrument for exploratory health studies. *American journal of public health, 62*(3), 337-342. doi:10.2105/AJPH.62.3.337

Varga-Atkins, T., McIsaac, J., & Willis, I. (2017). Focus Group meets Nominal Group Technique: an effective combination for student evaluation? *Innovations in Education and Teaching International, 54*(4), 289-300. doi:10.1080/14703297.2015.1058721

Warder, M. B. J. (2001). Occupational health nurses' perceptions of their education and training needs to meet the new public health agenda using the nominal group technique. *International Journal of Lifelong Education, 20*(4), 314-325. doi:10.1080/02601370120772

Wilkes, L., Cummings, J., & McKay, N. (2013). Developing a culture to facilitate research capacity building for clinical nurse consultants in generalist paediatric practice. *Nursing Research and Practice, 2013*, 1-8. doi:10.1155/2013/709025