

HENNESSY-HICKS TRAINING NEEDS ANALYSIS QUESTIONNAIRE AND MANUAL

For use at a local level to identify
training and development needs

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SECTION 1

OVERVIEW

The aims of the Hennessy-Hicks Training Needs Assessment Questionnaire are:

- To identify training needs at the individual, group or organisational level
- To prioritise these training needs

The development of the assessment instrument

The development stages of the instrument followed formal psychometric principles. Thematic analysis of the available literature, together with data obtained from focus groups and semi-structured interviews, were analysed and synthesised into themes to provide construct validity. From each theme a range of items was developed into questionnaire format, informed by the previous stage, to ensure a degree of content validity. The pilot questionnaire was administered to health care professionals from all disciplines; their responses were analysed using a variety of multivariate techniques. This stage allowed refinement of the instrument into its most reliable and valid items. The final questionnaire has since been used with over 7000 health care professionals globally, providing a robust data-base.

The structure of the instrument

The instrument comprises five sub-sections –

- research/audit,
- communication/teamwork,
- clinical tasks,
- administration
- management/supervisory tasks

These allow measurement of training needs within broad categories, as well as affording comparisons between categories. Each category can therefore be used independently of the others, or in any combination to provide the information required by the researcher. The instrument is semi-opaque, which means that respondents are less likely to be able to distort their responses and therefore, that the data obtained will be a more accurate reflection of the training requirements. In this way, the instrument has an advantage over other similar ones.

The data which emerge from the instrument have the capacity to:

- Identify training needs at the individual, team, group or organisational levels
- Inform educational and training packages at the individual, group or organisational levels
- Evaluate educational outcomes
- Customise training to meet local needs
- Aid priority setting
- Inform policy development

The instrument is unique in that it is tailored for use specifically with health care teams, but can easily be adapted to meet the particular objectives of a clinical specialty, management or organisation. For example, the instrument has been used to identify training requirements to upgrade general nurses working in primary care to specialist nurse status, informed the training required and was also used to assess the effectiveness of that training. The instrument has been successfully used in developed and developing countries, with equal success.

It can be adapted to meet the requirements of any given health care setting, team or group without compromising its validity and reliability. By following the basic processes outlined and highlighted under the 'development' section, up to 8 of the 30 existing items can be replaced, thereby enabling the instrument to be customised for a

specified purpose. In addition, up to a further 10 additional items can be added without compromising the psychometric properties, but these must be developed in accordance with basic principles of questionnaire design - briefly described above. Examples of the way in which the questionnaire has been used will be found in Sections 5, 7 and 9.

**Further advice and assistance may be negotiable by contacting
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**THE UNIVERSITY OF BIRMINGHAM AND AUTHORS, HOWEVER CANNOT TAKE
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SECTION 2

HENNESSY-HICKS TRAINING NEEDS ANALYSIS QUESTIONNAIRE: INSTRUCTIONS TO THE RESEARCHER

The intellectual property of the Hennessy-Hicks Training Needs Analysis questionnaire belongs to the University of Birmingham (UoB) but the questionnaire has been licensed to the World Health Organisation (WHO) for on-line use. Please reference the authors of the questionnaire (Hennessy, D.A. and Hicks, C.M.), the UoB and WHO when using or publishing work related to this questionnaire

The basic questionnaire 1: assessing training needs alone

The full details of the basic questionnaire are provided in Section 3, but an introductory outline will be given here.

Each item in the basic questionnaire is rated along a 7-point scale in 2 different ways - how important a task is to the respondent's job (Rating A); and how well the task is currently performed (Rating B).

Interpreting the ratings:

Rating A provides an index of how important the task is to the respondent's job, while Rating B provides an index of how well it is currently being performed. Comparing the scores for importance/performance provides an assessment of where the greatest training needs lie¹. The greater the difference in scores, the greater the training need.

1. Martilla, J and James, J (1977) Importance performance analysis. *Journal of Marketing* 41(1) 77 - 79

- Where a task gets a high rating on A but a low rating on B, the training need is high and should be the top priority for training (important task, not well performed).
- Where the task is rated low on A and low on B, then the task could be considered for training, but as a lower priority (unimportant task, not well performed)
- Where the task is rated high on A and high on B then there is no training need (important task, well performed)
- Where the task is rated low on A and high on B there is no training need (unimportant task, well performed).

Various comparisons and analyses may be performed depending on the purpose of the study e.g.: different groups of staff may be compared on their performance of any given task; or they may be compared on the differences between rating A and B (their training needs); or the differences between Ratings A and B can be calculated before a training programme and again afterwards to assess whether the training has reduced the training need. Alternatively, rather than getting individuals to assess themselves on the items, colleagues can be asked to complete the questionnaire instead. So – if you wanted to find out what the perceived development needs of Nurse A are, you could ask one (or more) of Nurse A's colleagues to assess her using the questionnaire.

The basic questionnaire 2: assessing training needs and preferred performance-improvement approaches

Clearly where training needs have been identified, there will be a requirement for performance development and enhancement. The way in which this is done will vary according to the situation, the personnel involved, the resources and what needs to be developed. Development programmes usually fall into two main categories – organisational change programmes and specific training courses. Therefore, a second version of the questionnaire can be used to identify how best to implement performance improvement programmes. So - in addition to Ratings A and B (importance and performance measures), each item can also be rated along a 7-point scale according to how far the respondent believes that the training need can be addressed by organisational changes (Rating C) or training courses (Rating D). Comparison of the scores for each item shows which of these is the preferred method of development. This version of the questionnaire is discussed in detail in Section 4.

It should also be noted that the 30 tasks in the Basic Questionnaire belong to one of five super-ordinate categories – research/audit (items 3, 6, 7, 9, 15, 21, 25, 26, 27), communication/teamwork (items 1, 5, 8, 13, 14, 27), clinical tasks (items 10, 12, 17, 18, 22, 24), administration (items 2, 20, 29) and management/supervisory task (items 4, 11, 16, 19, 23, 30). The training needs for each category can therefore be compared, if desired.

In addition to these basic questionnaires, an open response section has been included so that respondents can record any training needs they have which have not been covered by the questionnaire.

Finally, because the instrument is psychometrically robust, up to 25% of the items (up to a maximum of 8) may be swapped for items of the researcher's choice without invalidating the questionnaire and another 10 items may be added. However, these new items should have been obtained via thematic reviews of the literature, focus groups or interviews, in order to ensure that they have some validity. The biographical questions on the front sheet may also be adapted to suit the research.

SECTION 3

BASIC QUESTIONNAIRE:

ASSESSING TRAINING NEEDS ALONE

HENNESSY-HICKS ASSESSMENT OF TRAINING NEEDS

Before reading the instructions please complete the following*:

Job title:

Gender:

Age:

Number of years in post:

*[*Please note that this biographical section can be adapted to collect any information considered to be relevant to the study, for example, educational qualifications, professional qualifications, previous training etc could be included here]*

INSTRUCTIONS FOR COMPLETION:

This questionnaire comprises two sections that are to do with your training needs. Please answer all the questions as honestly as possible to enable us to compile a complete picture of your training requirements. Each section is prefaced by instructions for completion. Please read and follow these carefully.

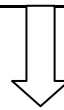
SECTION 1: Training needs

In order to perform your job effectively you need relevant skills. You will see listed below a range of skilled activities many of which you undertake in performing your job. Look at each of these activities and then rate each one by writing the appropriate number in the box. The first rating (A) is concerned with how important the activity is to the successful performance of your job; the second rating (B) is concerned with how well you currently perform that activity.

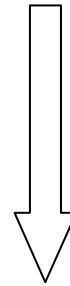
B: How well do you consider that you currently perform this activity?

Rating of 1- 7 - not well = 1; very well = 7

A: How important is this activity to the successful performance of your job? Rating of 1- 7 - not at all important = 1; very important = 7



A



B

1. Establishing a relationship with patients		
2. Doing paperwork and/or routine data inputting		
3. Critically evaluating published research		
4. Appraising your own performance		
5. Getting on with your colleagues		
6. Interpreting your own research findings		
7. Applying research results to your own practice		
8. Communicating with patients face-to-face		
9. Identifying viable research topics		
10. Treating patients		
11. Introducing new ideas at work		

12. Accessing relevant literature for your clinical work		
13. Providing feedback to colleagues		
14. Giving information to patients and/or carers		
15. Statistically analyzing your own data		
16. Showing colleagues and/or students how to do things		
17. Planning and organizing an individual patient's care		
18. Evaluating patients' psychological and social needs		
19. Organising your own time effectively		
20. Using technical equipment, including computers		
21. Writing reports of your research studies		
22. Undertaking health promotion studies		
23. Making do with limited resources		
24. Assessing patients' clinical needs		
25. Collecting and collating relevant research information		
26. Designing a research study		
27. Working as a member of a team		
28. Accessing research resources (e.g. time, money, Information, equipment)		
29. Undertaking administrative activities		
30 personally coping with change in the health service		

SECTION 2: Specific training needs

Please specify the areas of your job in which you would like to receive further training or instruction. List these in order of importance:

1.

2.

3.

4.

5.

6.

7.

8.

9.

10.

SECTION 4

ASSESSING TRAINING NEEDS AND PREFERRED APPROACH TO PERFORMANCE-IMPROVEMENT

HENNESSY-HICKS ASSESSMENT OF TRAINING NEEDS AND APPROACHES TO PERFORMANCE IMPROVEMENT

Before reading the instructions please complete the following*:

Job title:

Gender:

Age:

Number of years in post:

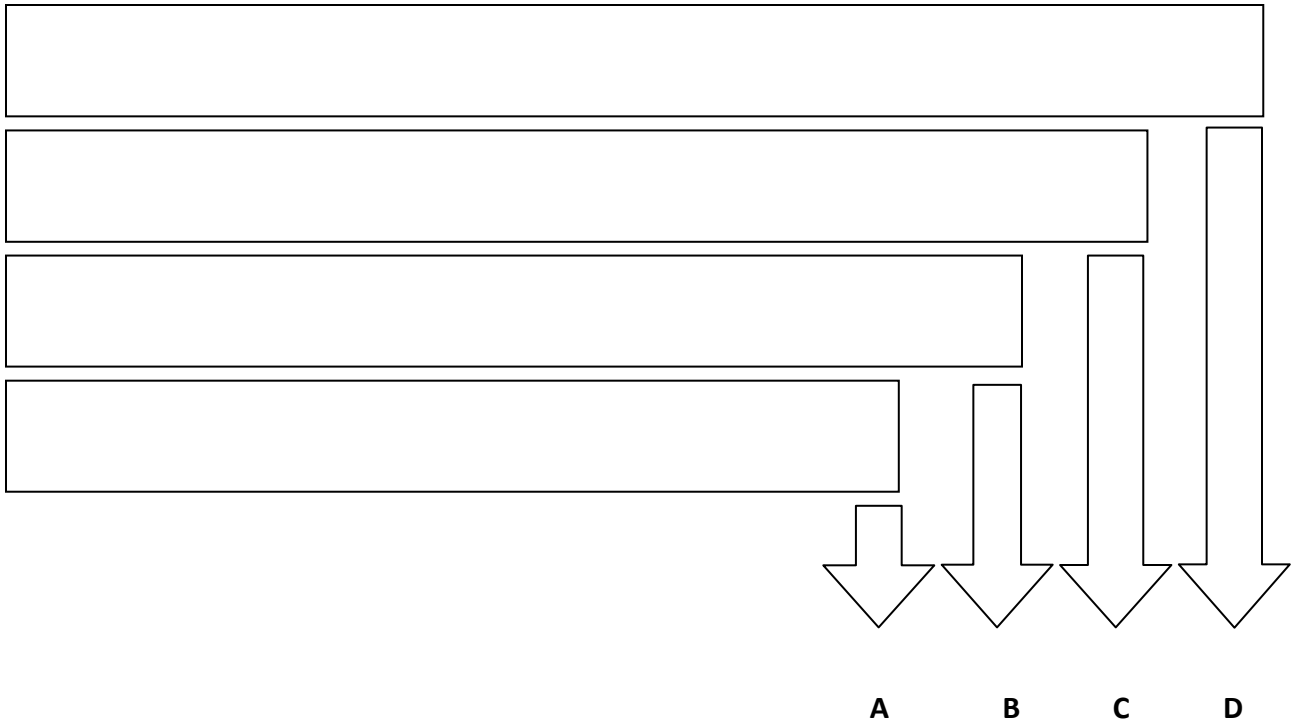
*[*Please note that this section can be adapted to collect any information considered to be relevant to the study, for example, educational qualifications, professional qualifications, previous training etc could be included here]*

INSTRUCTIONS FOR COMPLETION:

This questionnaire comprises four sections that are to do with your training needs. Please answer all the questions as honestly as possible to enable us to compile a complete picture of your training requirements. Each section is prefaced by instructions for completion. Please read and follow these carefully.

SECTION 1: Training needs

In order to perform your job effectively you need relevant skills. You will see listed below a range of skilled activities many of which you undertake in performing your job. Look at each of these activities and then rate each one by writing the appropriate number in the box. The first rating (A) is concerned with how important the activity is to the successful performance of your job; the second rating (B) is concerned with how well you currently perform that activity. However, in order to perform well at work, you also require suitable work circumstances (eg other people's approach, compatible work practices, lack of practical constraints etc). In other words, your working environment should allow you to exercise your skills appropriately. Therefore, the second two ratings (C and D) are concerned with the scope for improving performance either through training alone or through changes in your work situation.



1. Establishing a relationship with patients				
2. Doing paperwork and/or routine data inputting				
3. Critically evaluating published research				
4. Appraising your own performance				
5. Getting on with your colleagues				
6. Interpreting your own research findings				
7. Applying research results to your own practice				
8. Communicating with patients face-to-face				
9. Identifying viable research topics				
10. Treating patients				
11. Introducing new ideas at work				
12. Accessing relevant literature for your clinical work				
13. Providing feedback to colleagues				
14. Giving information to patients and/or carers				
15. Statistically analyzing your own research data				
16. Showing colleagues and/or students how to do things				

17. Planning and organizing an individual patient's care				
18. Evaluating patients' psychological and social needs				
19. Organizing your own time effectively				
20. Using technical equipment, including computers				
21. Writing reports of your research studies				
22. Undertaking health promotion activities				
23. Making do with limited resources				
24. Assessing patients' clinical needs				
25. Collecting and collating relevant research information				
26. Designing a research study				
27. Working as a member of a team				
28. Accessing research resources (e.g. time, money, information, equipment)				
29. Undertaking administrative activities				
30 personally coping with change in the health service				

SECTION 2: Specific training needs

Please specify the areas of your job in which you would like to receive further training or instruction. List these in order of importance:

- 1.**
- 2.**
- 3.**
- 4.**
- 5.**
- 6.**
- 7.**
- 8.**
- 9.**
- 10.**

SECTION 5

AN EXAMPLE OF ADJUSTING THE QUESTIONNAIRE FOR A SPECIFIC PURPOSE, OR SPECIFIC AREA OF CARE OR HEALTH PROVIDER

The Hennessy-Hicks Training Needs Assessment questionnaire can be adapted for many different purposes. This section will explain how it can be adapted to identify the training needs of staff for a new policy.

The Sexual and Reproductive Health Department in the World Health Organisation has developed an integrated list of Sexual and Reproductive Health (SRH) skills for use in Primary Health Care. This list has 12 domains: one that relates to the attitudes that staff should have to sexual and reproductive health care and 11 competencies required by staff to provide high quality sexual and reproductive health care.

The list is based on the most up-to-date knowledge sourced from literature surveys, research and advice from international experts around the world. The list has taken more than two years to develop with extensive consultation and is expected to be published shortly.

Many countries may wish to introduce these competencies into their SRH services. As part of their planning to do so, they may decide to clarify the role of different cadre who provide SRH in primary health care and to assess their training needs.

The Hennessy-Hicks questionnaire can be adapted to identify the Family Planning and Fertility Care training needs. A comparison with the 30 items in the basic Hennessy-Hicks questionnaire and the tasks in the WHO Family Planning Competencies is shown below. You will see that 5 of the original items have been omitted and an additional 10 items, developed from the core competency framework, have been included. Therefore, this application conforms to the requirement that up to 25% of the basic items can be changed or omitted and a further 10 added, without compromising the validity of the questionnaire.

Standard TNA Questionnaire	Adaptation for Assessing the Family Planning Training Needs of Staff in Primary Health Care
1. Establishing a relationship with patients	1. Establishing a supportive relationship with patients
2. Doing paperwork and/or routine data inputting	2. Inputting accurate family planning data into written or computerized records
3. Critically evaluating published research	3. Assessing the value of publications in the area of sexual health
4. Appraising your own performance	4. Appraising your own performance in family planning
5. Getting on with your colleagues	5. Getting on with primary health care colleagues
6. Interpreting your own research findings	OMITTED
7. Applying research results to your own practice	OMITTED
8. Communicating with patients face-to-face	6. Communicating with patients appropriately and effectively
9. Identifying viable research topics	7. Identifying areas of clinical practice that should be systematically investigated
10. Treating patients	8. Carrying out family planning procedures

	e.g. giving injections, inserting and removing IUDs, male or female sterilization
11. Introducing new ideas at work	9. Introducing new ideas into your own family planning work
12. Accessing relevant literature for your clinical work	10. Finding information that can inform your clinical work
13. Providing feedback to colleagues	11. Providing feedback to other colleagues working in sexual health
14. Giving information to patients and/or carers	12. Providing correct information on Family Planning Methods to individuals, couples and groups
15. Statistically analyzing your own research data	OMITTED
16. Showing colleagues and/or students how to do things	13. Instructing or training students/ junior staff/community health workers in family planning tasks
17. Planning and organizing an individual patient's care	14. Advising an individual or couple on family planning
18. Evaluating patients' psychological and social needs	15. Assessing family planning patients' psychological and social needs
19. Organizing your own time effectively	16. Organizing own time as a family planning carer effectively
20. Using technical equipment, including computers	17. Knowing how to use equipment and explain family planning methods
21. Writing reports of your research studies	OMITTED
22. Undertaking health promotion activities	18. Undertaking family planning health promotion and prevention activities
23. Making do with limited resources	19. Making do with limited resources
24. Assessing patients' clinical needs	20. Assessing patients'/ couples' family planning needs
25. Collecting and collating relevant research	OMITTED

information	
26. Designing a research study	21. Identifying areas worthy of investigation in family planning or fertility problems in your local area
27. Working as a member of a team	22. Working as a member of a primary health care team
28. Accessing research resources e.g. time, money, information, equipment	23. Locating and accessing relevant equipment, resources and supplies for your family planning work
29. Undertaking administrative activities	24. Undertaking administrative duties
30 Personally coping with change in the health service	25. Personally coping with change in sexual and reproductive and family planning care
	26. Developing a shared respect in your primary health care team for individual dignity, including marginalized and vulnerable populations
	27. Planning patients' referral for further investigations or treatment
	28. Respecting knowledge and learning styles of individuals when undertaking family planning teaching
	29. Respecting client's choices as well as their right to refuse physical examination, testing and interventions
	30. Assisting patients in making informed Family planning choices
	31. Reviewing other family planning options when the client's current method is unsatisfactory'
	32. Interpreting your own patient data about medical conditions that would contra-indicate use of specific contraceptive methods

	33. Interpreting results from laboratory and clinical investigations and physical examination of patients
	34. Recognising and managing risk in family planning care
	35. Assessing satisfaction with and correct use of method with return family planning clients

SECTION 6:

TWO DIFFERENT METHODS OF MANUAL ANALYSIS

Making sense of your findings

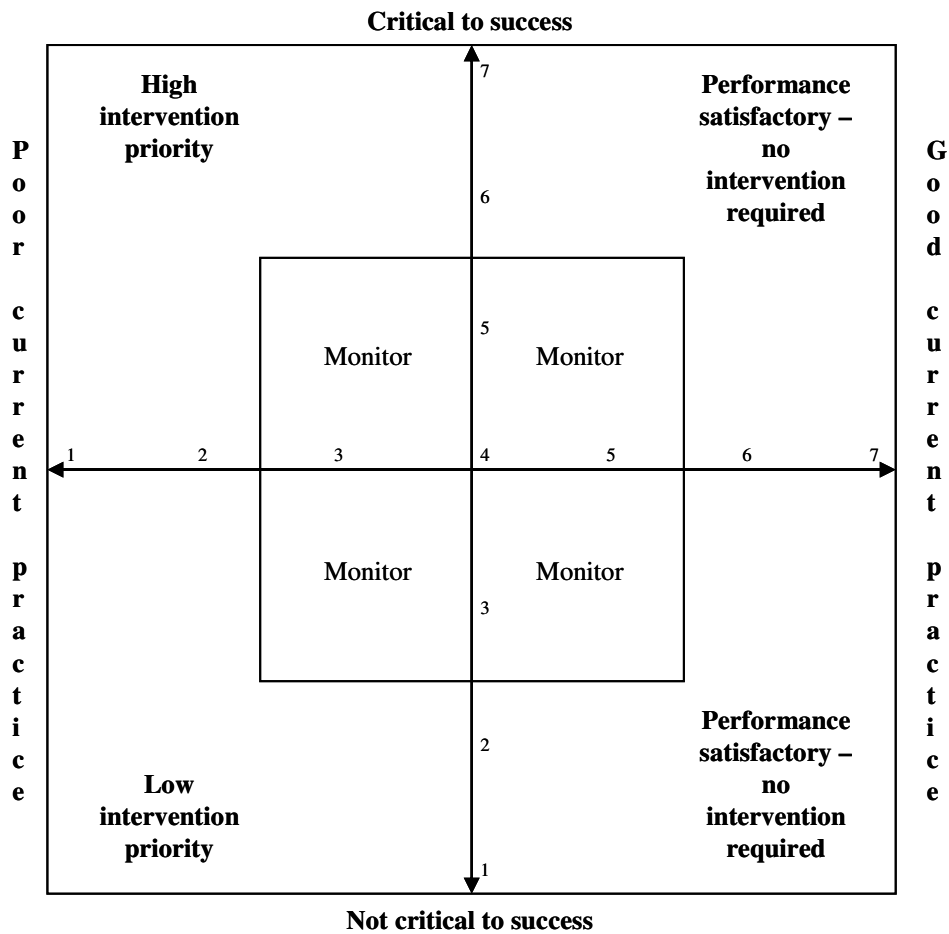
Depending on the purpose of your study, there are several ways in which you can analyse the results from the TNA. Remember that high scores on an item's importance together with low scores on its performance are indicative of a training need.

IDENTIFYING TRAINING NEEDS – AN INTRODUCTION

Training needs are identified where the biggest gaps are between the importance attributed to a task/item (Rating A on the questionnaire) and how well the person believes they perform this task (Rating B on the questionnaire). The biggest gaps indicate the greatest training need. This can be done for an individual or for groups.

You will also need to bear in mind, however, the absolute degree of importance attributed to a given item, since you might observe a training need on an activity that is not considered to be particularly important; for example, an item may be given a score of 4 for importance, but only 1 for performance. This would suggest a training need, but not an urgent one, as the actual task is perceived to be of only moderate importance. Training needs can be plotted according to their importance and performance as illustrated in Figure 1.

Figure 1: Example of Presenting Training Needs Scores in a Quadrant Graph Format

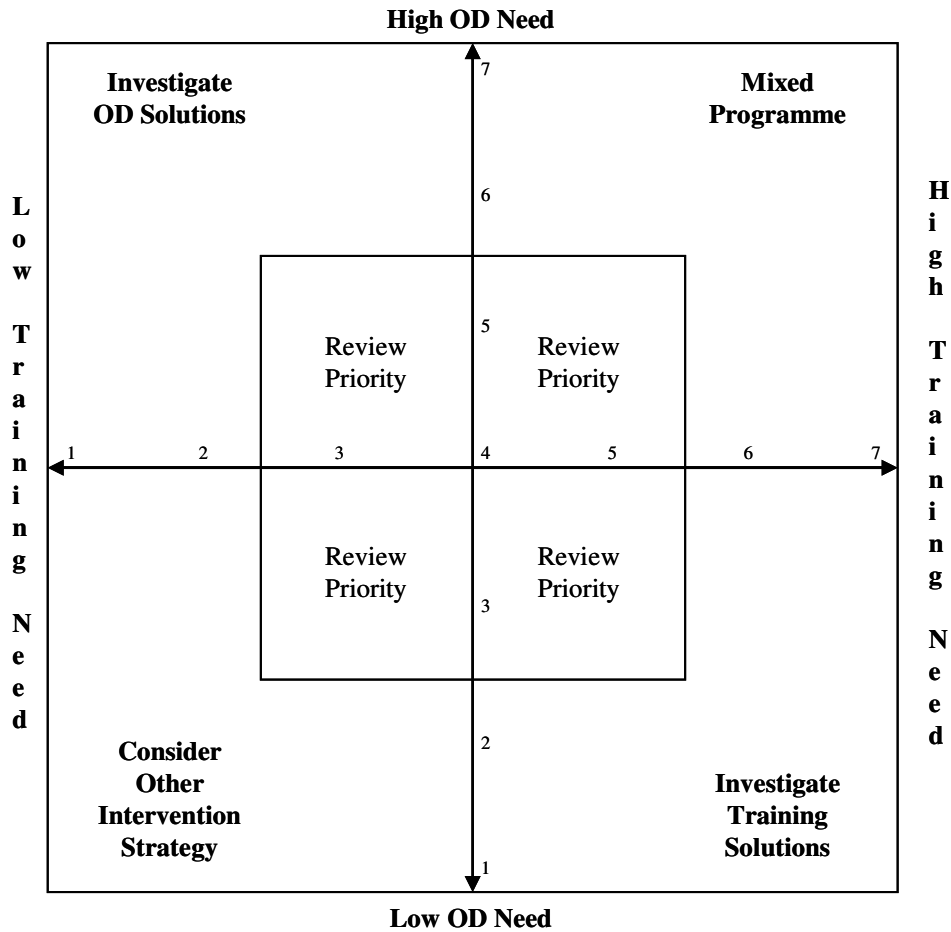


IDENTIFYING APPROACHES TO PERFORMANCE IMPROVEMENT

Secondly, the way in which a particular training need could best be addressed may be identified by the scores given to the relevance of organisational change and development (Rating C) and specific training courses (Rating D) for improving performance on that item. If a higher score has been given for organisational development than for a training course, then this would mean that the respondent thinks that this training need would be better managed through organisational development. If a higher score has been given to a training course than to organisation development for the item, this means that the respondent believes that the training

need would be better addressed by a specific training course than by organisational development. This point is illustrated in Figure 2.

Figure 2: Example of Presenting Preferred Intervention Scores in Quadrant Graph Format



This can be done for an individual or for groups.

COMPARING DIFFERENT GROUPS ON THEIR TRAINING NEEDS

You may wish to compare different professional groups on their training needs, to see where the areas of difference and similarity are. Where there are similarities, this might open up the possibility of shared learning when developing training. Where there are differences between groups in terms of their training needs, then this may reflect

differences in professional roles and requirements; this in turn could mean that development customised for specific groups might be required.

COMPARING DIFFERENT SUB-CATEGORIES OF ITEM

The items in the questionnaire fall into 5 sub-categories - research/audit, communication/teamwork, clinical tasks, administration and management/supervisory tasks. You might wish to compare the training needs for these sub-categories - for example, are there greater training needs on the sub-category of research items, compared with the sub-category of clinical items?

APPROACHES TO ANALYSIS

The following guidelines look at individual and group questionnaire analysis, using either graphs or inferential statistics. We will use the following data from just 5 questionnaire tasks/items to illustrate the different approaches.

(A = importance of the task, B = performance on the task, C = relevance of organisational development to improving performance on this task, D = relevance of training course to improving performance on this task).

Table 1: a sample of hypothetical data

QUESTIONNAIRE ITEM	RATINGS			
	A	B	C	D
1. establishing a relationship with patients	7	5	2	7
2. doing paperwork and/or routine data inputting	3	4	5	3
3. critically evaluating published research, in order to inform standards/protocols in your clinical area	6	2	1	7
4. appraising your own and other’s performance	4	4	1	5
5. recognising and managing risk in clinical care	7	2	2	7

1. Individual questionnaire analysis

Sometimes you might want to look at the training needs of a particular individual. For example, an annual performance review as part of a staff development programme might consider the particular development needs of individual members of staff. The following suggest some ways of analysing the results from a single person's questionnaire:

SIMPLE SUBTRACTION: you can subtract the performance score (Rating B) from the importance score (Rating A) for each individual questionnaire item. This will give you a difference score which reflects the degree of training need – high scores on importance and low scores on performance indicate a training need. The bigger the difference score, the greater the training need. You can rank order the training needs by the size of these differences. This means, for example, that limited training budgets could be focused on the top-ranking items. For each of the training needs you can look to see whether the respondent considers organisational development (Rating C) or a training course (Rating D) would be more effective in enhancing performance on that task, depending on which of these has a higher score.

Using the sample data above, the following difference scores are obtained for items 1 – 5 (Rating A – Rating B):

Item 1 = +2

Item 2 = -1

Item 3 = +4

Item 4 = 0

Item 5 = +5

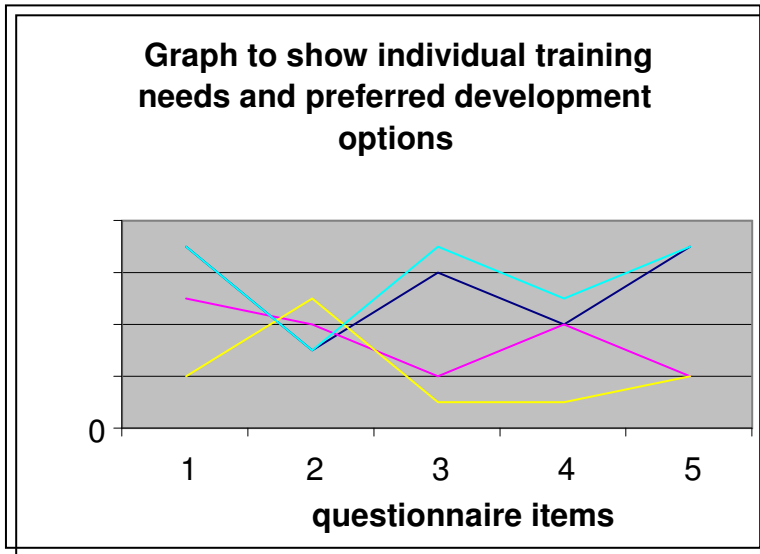
This means that item 5 has the greatest training need, followed by items 3 and 1. Items 2 and 4 have no training need. Looking at the scores given to the relevance of organisational development (Rating C) vs training courses (Rating D) for developing

these training needs, it can be seen that for all three items with identified training needs (5, 3 and 1), that training courses are considered to be more useful than organisational development in improving performance on these.

GRAPHS: alternatively, you can plot an individual's scores on a graph, illustrated by Figure 3 below. The vertical axis represents the scores (from 1 – 7), while the horizontal axis represents the questionnaire items. You can plot the individual's score on both the performance and importance scores (Ratings A and B), so that you can see, at a glance, where the biggest gaps are between the two sets of scores. You can add the organisational development and training course scores to the graph (Ratings C and D), so that you can also see how a particular training need would be better addressed. Therefore, you would look at an item that had a big gap between performance (B) and importance (A) and then see whether the organisational development (C) or training course (D) score for this item was greater. The bigger the score, the more valuable the respondent considers this approach to managing the training need and enhancing performance.

Using the sample data given in Table 1 above, if these scores were plotted on a graph we would have the following graph (dark blue line = Rating A - importance, pink line = rating b - performance; yellow line = Rating C - organisational development; light blue line = Rating D - training course):

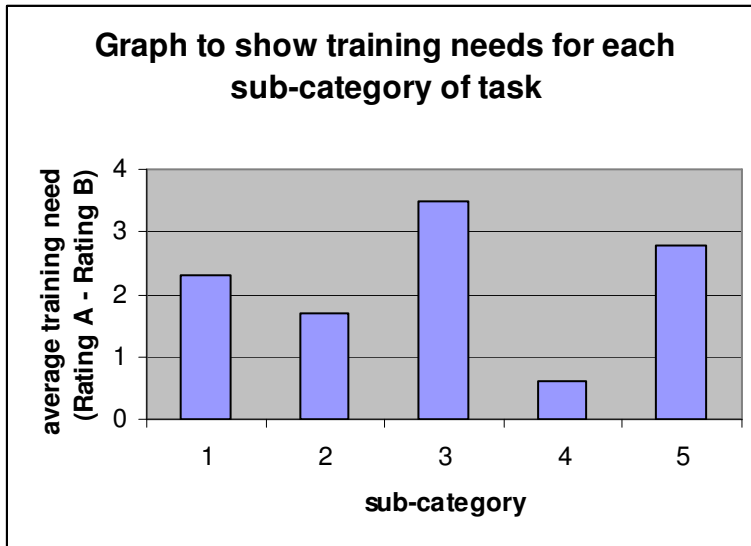
Figure 3: Graph to show individual training needs and preferred performance development options (scores along the vertical axis)



Analysing training needs for each sub-category of item

You will remember that the questionnaire items fall into 5 different sub-categories - research/audit, communication/teamwork, clinical tasks, administration and management/supervisory tasks. You might want to compare the training needs for each sub-category. The easiest way to do this is to calculate the differences between performance and importance (Ratings A and B) for each item and then taking the items in each category (see section 2 for which items come into which category) calculate the average difference score, You will end up with 5 average scores – one for each sub-category. The average scores for each of the 5 sub-categories can then be plotted on a graph, like the one shown in Figure 4 below:

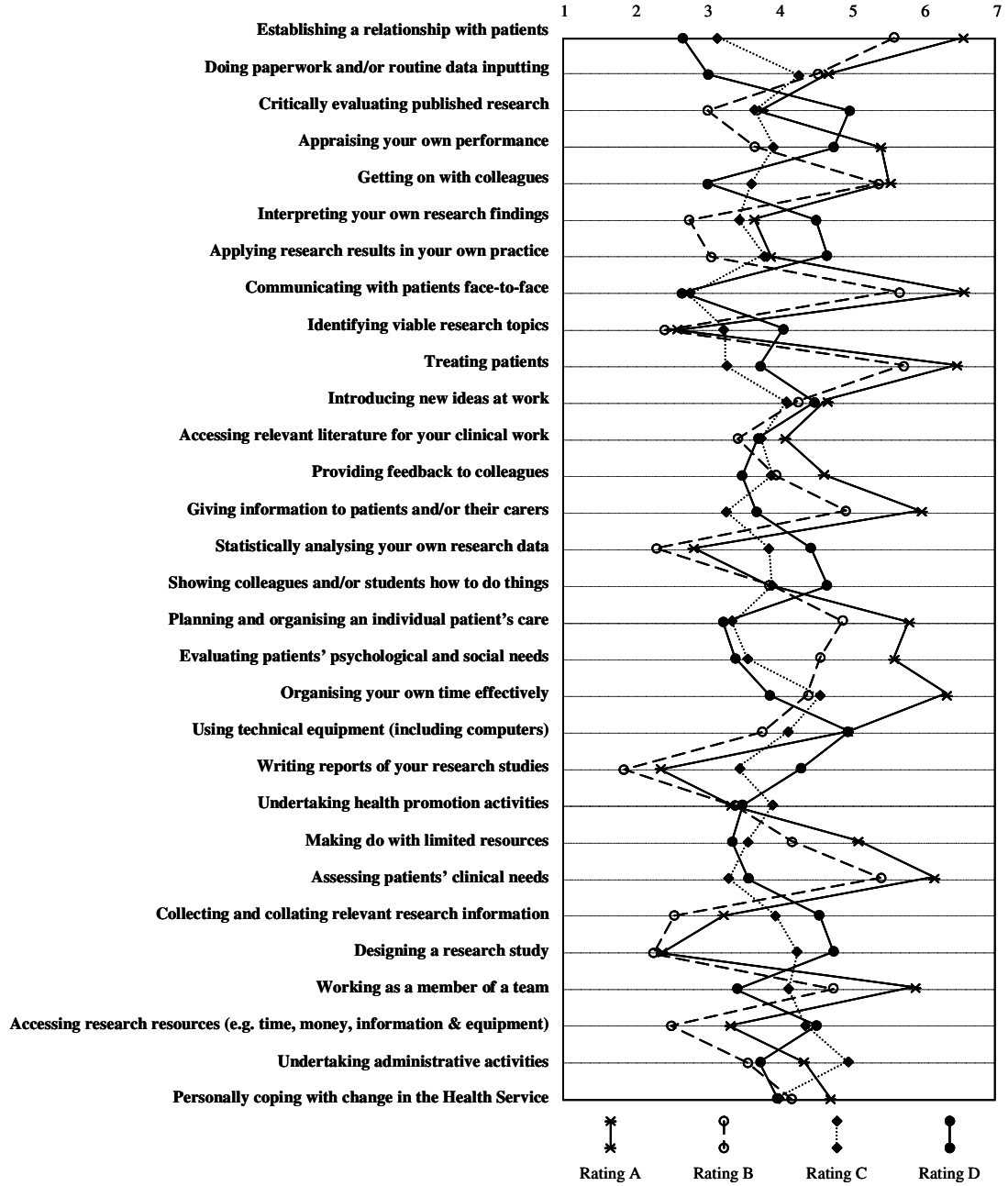
Figure 4: Graph to show training needs for each of the five sub-categories in the questionnaire



You can also present the information in a quadrant graph with the vertical central line representing the importance scores (top of the line = very important, bottom of the line = not very important), and the horizontal central line representing performance scores (left hand pole = poor performance, right hand pole = good performance – see Figure 1). This means that any items located in the top left hand quadrant represent the greatest training need (ie: high importance and poor performance), those items located in the top right-hand quadrant represent no training need (ie: high importance and good performance); those in the bottom left-hand quadrant represent minimal training need (ie: low importance, poor performance), and those in the bottom right hand corner represent no training need (ie low importance, good performance).

A further alternative is to present all the scores graphically, item by item like Figure 5 on the next page:

Figure 5: Graph to show training needs and preferred intervention item by item



2. Group questionnaire analysis

The aims of group analysis are comparable to those of the individual analysis and therefore, the basic principles of analysing the data are similar. However, rather than using individual scores, you will need to calculate the average scores for the group. The sorts of analysis you might wish to undertake for groups are as follows:

SIMPLE SUBTRACTION: for every respondent and each item in turn, you would first subtract the performance score (Rating B) from the importance score (Rating A) to obtain the difference, or training need. For instance, if you had 100 respondents and the basic 30-item questionnaire, you would have 100 difference scores for each of the 30 items in the questionnaire. You would then calculate the average difference score for each item, giving you an average score for each of the 30 items. The bigger the average difference score, the greater the group's training need; these averaged difference scores can then be rank ordered to establish what the training priorities are for the group. For each of the training needs you can also see whether the group generally considers organisational development (Rating C) or training courses (Rating D) to be more effective at improving performance on tasks showing a clear training need. This would be established by which of these two options (C or D) has a higher average score. As with the individual analysis, the training needs scores can be rank ordered by size to provide a list of priorities for training and development.

USING GRAPHS: again, you will need to use average scores, rather than individual scores. For each item, calculate the group average. Therefore, for a group of 100 respondents and the basic 30-item questionnaire, you would need to calculate the average score for the 100 respondents for:

- The importance scores on each item (Rating A)
- The performance scores on each item (Rating B)
- The importance of organisational development in enhancing performance on each item (Rating C)

- The importance of training courses in enhancing performance on each item (Rating D)

So, if we take the same five questionnaire items as an example and some hypothetical data, the average scores on Ratings A, B, C and D, for 100 respondents might be as shown in Table 2 below:

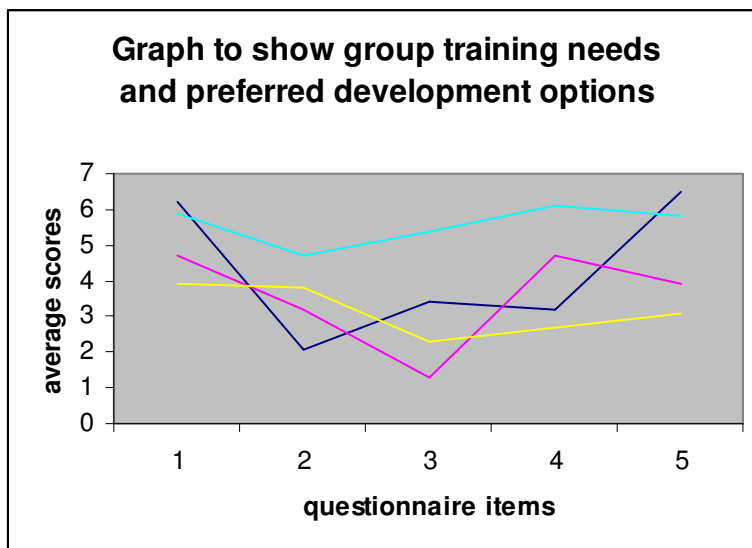
Table 2: a sample of hypothetical group data

QUESTIONNAIRE ITEM	AVERAGED GROUP RATINGS			
	A	B	C	D
1. establishing a relationship with patients	6.2	4.7	3.9	5.9
2. doing paperwork and/or routine data inputting	2.1	3.2	3.8	4.7
3. critically evaluating published research in order to inform standards/protocols in your clinical area	3.4	1.3	2.3	5.4
4. appraising your own and performance	3.2	4.7	2.7	6.1
5. recognising and managing risk in clinical care	6.5	3.9	3.1	5.8

These average scores can then be plotted on a graph as suggested in Figure 6 below. The vertical axis represents the scores from 1 - 7, while the horizontal axis represents the 30 (or however many items you have included in your questionnaire) items. You can plot the group's average scores on each of the 30 items, so that you have four distinct lines on the graph, one representing the average importance score (Rating A), one the average performance score (Rating B), one the importance of organisation development in performance enhancement (Rating C) and one for the

role of training courses in performance enhancement (Rating D). By plotting these four lines you can see, at a glance, where the biggest gaps are between the performance and importance scores, which indicate where the main training needs are for the group. By looking at these training needs in relation to the importance of either organisational development or training courses in enhancing task performance, you can also see how best to address the training requirement. Therefore, you would look at an item that had a big gap between performance and importance and then see whether the organisational development or training need score for this item was greater. The bigger the score, the more valuable the group considers this approach to managing the training need. If we drew a graph of these averaged scores from Table 2, we would get the following (dark blue line = Rating A – importance; pink line = rating b - performance; yellow line = Rating C - organisational development; light blue line = Rating D - training course):

Figure 6: Graph to show group training needs and preferred development options



Alternatively, you might want to look at the relative training needs for each of the 5 sub-categories of task. In this case you would calculate the average difference scores for the items in each of the given sub-categories and plot these (see the bar graph in Figure 4 above).

You can also present the group averages in a quadrant graph with the vertical central line representing the average importance scores (top of the line = very important, bottom of the line = not very important), and the horizontal central line representing average performance scores (left hand pole = poor performance, right hand pole = good performance – see Figure 1). This means that any items located in the top left hand quadrant represent the greatest overall training need for the group (ie: high importance and poor performance), those items located in the top right-hand quadrant represent no overall training need for the group (ie: high importance and good performance); those in the bottom left-hand quadrant represent overall minimal training need (ie: low importance, poor performance), and those in the bottom right hand corner represent overall no training need (i.e. low importance, good performance). Likewise, the preferred interventions obtained by averaging the scores across the group can be presented in a quadrant graph like Figure 2.

USING INFERENCE STATISTICS

You can also analyse group data using inferential statistics. If you wanted to compare the training needs of various professional groups to see whether the groups had significantly different training requirements on each item, then you would do the following:

- For each respondent, calculate the difference between their importance and performance scores on each item (Rating A – Rating B).
- Taking each item in the questionnaire separately, you would then use either an unrelated t-test if you are comparing just two groups of respondents, or a 1-way anova for unrelated designs, if you have more than two groups (it is permissible to use parametric tests on the multiple-point ordinal data obtained, as long as there is no gross inequality between intervals^{1,2}). This would give you 30 separate statistical t-test or anova calculations if you are using the standard 30-item questionnaire.

1. Andersen, NH (1961) Scales and statistics: parametric and non-parametric. *Psychological Bulletin* 58(4) 305 – 316
2. Kerlinger, FN (1973) *Foundations of Behavioural Research: 2nd edition*. New York, Holt

If you wanted to see whether a single group had different training requirements for each sub-group of items, then you would:

- Calculate the difference scores (Rating A – Rating B) for each respondent on each of the questionnaire items
- Taking all the items in each sub-category and for each respondent, you would calculate the average difference score for each sub-category. So – for the research category, there are 9 items; for each respondent you would average their difference scores for the 9 items in this category to give you a single average score for research tasks; you would repeat this for each of the other 4 sub-categories. This would mean that every respondent would have 5 average scores, one for each of the sub-categories of items.
- You would then compare the training needs of the group on these sub-categories using a 1-way anova for related designs.

If you wanted to see whether different groups had different training needs on each of the sub-categories, then using the average scores for each sub-category, you would compare the different professional groups using a mixed between/within anova (the different groups would be the between factor, and the average training needs for the sub-categories would be the within factor).

All these graphs described above can be drawn by hand or by using a software package such as SPSS or Excel. The inferential calculations can be undertaken using a software package, such as SPSS, or by hand. The following texts provide the formula and the probability tables:

Greene, J and D'Oliveira, M (2005) *Learning to use statistical tests in psychology*.

Open University Press, Buckingham

Hicks, C (2009) *Research methods for clinical therapists: project design and analysis*.

5th edition. Edinburgh, Churchill Livingstone, Elsevier

SECTION 7

AN EXAMPLE OF HOW THE HENNESSY- HICKS QUESTIONNAIRE HAS BEEN USED IN A LARGE SURVEY: INDONESIA

Application of the instrument in Indonesia

This section describes the use of the Hennessy-Hicks TNA tool in a large survey of the training needs of nurses and midwives in hospitals and primary health care in Indonesia.

The Department of Nursing in the Ministry of Health (MOH) of the Republic of Indonesia requested international technical assistance from the World Health Organisation to assess the role and job function of nurses and midwives. A National Working Group (NWG) was appointed to work with the WHO technical assistant.

A literature search of studies about the performance of nurses and midwives in Indonesia from 1990 - 2000 was undertaken and a number of issues and gaps were highlighted. This was followed up by a scoping study in both hospitals and primary health care to explore further some of these issues. The scoping study confirmed the issues identified in the literature search, some other concerns about the basic preparation and ongoing education of nurses and midwives and also their performance and management (Hennessy, 2001). The MOH agreed that a national survey should be

conducted to explore the role, job function and performance of nurses and midwives in Indonesia.

One of the tools suggested for use in the survey was the valid and reliable TNA tool developed by Hicks, Hennessy and Barwell (1996) at the University of Birmingham (UOB). The tool had been used in other countries and found to be transferable (Hennessy and Hicks, 1998 and see other references in Section 9 for articles reporting some of these studies). This tool was explored by the NWG for suitability for collecting information from providers and their managers in Indonesia. The UoB tool has 30 basic tasks, which identify respondents' perceptions of the importance of each task as well as how well the respondents believe they perform the task. The NWG team scrutinized every task for relevance to the issues identified in the Indonesian context; the questions required minor adaptation and the addition of another 9 items (the adaptation will be found at the end of this section), so that the instrument would address the aims of the study. The additional items were compiled following a thematic review of a) the relevant literature, b) interviews with health care providers and c) focus groups with health care providers. The format of these items was kept as similar as possible to the basic questionnaire items. These were translated by the NWG, following a forward/back/forward translation process, according to recommended practice.

The survey plan included collecting administering the TNA questionnaire to two groups:

- individual health care providers (HCPs)
- Their managers

In summary, each HCP and their manager completed a TNA, in order to ensure that the information reflected the views of providers and their managers.

Survey Location

Indonesia is a very large country geographically and also in population size. The MOH wanted the sample population to come from a widely dispersed area. Therefore, the only way to collect the data was through using specially trained workers – see later section. The process of the research and exactly how to administer the tools, once they had been translated into Indonesian, had to be tested. The process of completion led to detailed planning, which is described in the following paragraphs.

Sample Size

A stratified sampling method was used to ensure that the TNA information was collected from as representative a group as possible. Therefore, the design of the main study required groups of 25 nurses for each grade, and 25 midwifery respondents for each grade, working in hospitals and community health; their managers were also recruited. The survey took place in four provinces in different geographical areas. The HCPs and their managers were represented by samples from two districts in each of the 4 provinces. There was a planned total sample size of midwives, nurses and managers, of between 800 and 1000 providers or 200 per province. Clearly it is no simple matter removing large numbers of front-line staff of provider nurses and midwives from the service to collect the TNA data. Very careful planning was essential.

The sampling processes had to be opportunistic as random sampling was not feasible because of the geographical and practical complexity of the country. The provincial offices were invited to identify the groups of 25 nurses and midwives from a number of providers in the two districts so as to spread out the effects on the service of staff absences during the survey. In the planning stage, it was unclear whether the ambitious design could be completed successfully.

Pilot Study

A pilot study assesses the feasibility both of completing the tools and the processes of data collection. It can also establish whether the data would actually address the research question. The pilot study conducted here showed that access to the providers was possible; and although the tools took time to complete, the respondents found it rewarding to do so, which was an unexpected and positive result.

The tools clearly had face value and demonstrated that they could be completed. A preliminary analysis showed interesting results, which led to much discussion and excitement in the NWG about the potential outcomes of the main study. With this result from the pilot study, permission was given by the Ministry of Health and WHO to proceed with the main study.

Preparation for data collection in the main study

Members of the NWG made preliminary visits to the four provinces chosen for the study (see above) to prepare the field for the rapid needs assessment. Support and co-operation from staff in provinces, districts, health centres as well as hospital management and clinicians was established to ensure the success of the data collection process. In each province, the key stakeholders appreciated the involvement in the study and welcomed and supported the data collection. These stakeholders asked for the results of the study to assist them with staffing strategies for the pending decentralization of regulations.

Training of data collectors

In each province, the data collection team included national data collectors and also a provincial coordinator, either from the nursing or the midwifery association, as well as five local facilitators, who were either senior provincial health office managers or nursing academics or both. A four-day workshop for training data collectors was held in the centre for those members of the NWG who would travel to different provinces to collect data. During this workshop the trainers participated in a simulation exercise, which clarified the nature of the research tools and the process of the data collection required. They also learnt how to distribute the tools to the survey participants, that is, both HCPs and managers. Finally, they learnt how to handle and record the completed responses before returning them to Jakarta, where they were analysed.

Data collection

Each grade group of 25 and one first-line manager (one manager for 25 participants in each grade) completed a questionnaire and participated in a focus group. The entire process provided an extraordinary and unique opportunity for all participants. They were able to think deeply about the content of their own job roles, their own performance and productivity and to discuss this with their peers. The process was empowering and was greatly valued by all participants. A team from NWG planned the statistical analysis framework for the data from the UOB questionnaire. Three papers have been published on the results from this survey (Hennessy, et al 2006a, 2006b, 2006c).

Summary

A total of 856 nurses and midwives from hospitals and community settings, 40 first-line managers from hospitals and community settings (the functional managers who manage or co-ordinate a specific grade in hospital wards or health centres) and 54 senior managers in district offices, health centres and hospital management participated in the study. The UoB TNA tool was used for this survey and the tasks were adapted and tested for use in Indonesia. How this was done is explained above and the end result is shown on the next page. The adapted tool was found to be valid and reliable.

<u>A Standard UoB TNA Questionnaire</u>	<u>Adaptation of UoB TNA Questionnaire For Indonesia Survey</u>
1. Establishing a relationship with patients	Establishing a relationship with patients
2. Doing paperwork and/or routine data inputting	Inputting data into written or computerized records
3. Critically evaluating published research	Critically evaluating published research
4. Appraising your own performance	Appraising your own and other's performance
5. Getting on with your colleagues	Getting on with your colleagues
6. Interpreting your own research findings	Interpreting your own patient data
7. Applying research results to your own practice	Interpreting results from clinical investigations
8. Communicating with patients face-to-face	Undertaking clinical examination of patients
9. Identifying viable research topics	Recognising and managing risk in clinical care
10. Treating patients	Undertaking technical nursing or midwifery procedures
11. Introducing new ideas at work	Introducing new ideas into your own clinical work
12. Accessing relevant literature for your clinical work	Requesting laboratory investigations and results
13. Providing feedback to colleagues	Developing joint work arrangements with others
14. Giving information to patients and/or carers	Showing patients and their families how to do things
15. Statistically analyzing your own research data	Analysing patient data
16. Showing colleagues and/or students how to do things	Instructing or training students/ junior staff/TBA
17. Planning and organizing an individual	Prioritising your work according to patient's

patient's care	needs
18. Evaluating patients' psychological and social needs	Assessing patients psychological and social needs
19. Organizing your own time effectively	Planning/organizing patients' treatment
20. Using technical equipment, including computers	Using technical equipment
21. Writing reports of your research studies	Writing clinical, shift and other reports
22. Undertaking health promotion activities	Undertaking health promotion and prevention activities
23. Making do with limited resources	Assessing costs and outcomes of procedures
24. Assessing patients' clinical needs	Assessing patients physical needs
25. Collecting and collating relevant research information	Collecting your own clinical/patients/surveillance data
26. Designing a research study	Identifying area worthy of investigation in your practice
27. Working as a member of a team	Working as a member of a team
28. Accessing research resources e.g. time, money, information, equipment	Locating and access relevant equipment for your clinical work
29. Undertaking administrative activities	Undertaking administrative duties
30 Personally coping with change in the health service	Actively assisting in change management activities
	31. Developing a shared mission of clinical area goals
	32. Planning patients discharge
	33. Making appropriate patient referrals
	34. Making decisions about patients clinical problems
	35. Assisting patients in making informed choices
	36. Designing systems for patient monitoring/observation

	37. Undertaking budget planning activities
	38. Showing patients and their families how to do things
	39. Consulting with colleagues about care options

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SECTION 8

ITEM BANK: A LIST OF QUESTIONNAIRE ITEMS USED IN OTHER STUDIES

Basic questionnaire items

The basic questionnaire comprises 30 items; of these 8 can be replaced and a further 10 added without compromising the psychometric properties of the instrument. In this section are the basic items, plus additional item banks that have already been used in other studies. These can either replace 8 of the original items and/or a further 10 items can be added from this item-bank.

BASIC ITEMS

1. Establishing a relationship with patients
2. Doing paperwork and/or routine data inputting
3. Critically evaluating published research
4. Appraising your own performance
5. Getting on with your colleagues
6. Interpreting your own research findings
7. Applying research results to your own practice
8. Communicating with patients face-to-face
9. Identifying viable research topics
10. Treating patients
11. Introducing new ideas at work
12. Accessing relevant literature for your clinical work
13. Providing feedback to colleagues
14. Giving information to patients and/or carers
15. Statistically analyzing your own research data
16. Showing colleagues and/or students how to do things

17. Planning and organizing an individual patient's care
18. Evaluating patients' psychological and social needs
19. Organizing your own time effectively
20. Using technical equipment, including computers
21. Writing reports of your research studies
22. Undertaking health promotion activities
23. Making do with limited resources
24. Assessing patients' clinical needs
25. Collecting and collating relevant research information
26. Designing a research study
27. Working as a member of a team
28. Accessing research resources eg time, money, information, equipment)
29. Undertaking administrative activities
30 personally coping with change in the health service

Additional items

EXTENDED NURSING ROLE

- Recognizing and managing risk in clinical care
- Making appropriate patient referrals
- Undertaking patient consultations
- Applying pharmacology to practice according to defined clinical guidelines
- Undertaking technical nursing, clinical or medical procedures
- Enabling patients to make informed choices about their care
- Managing other staff
- Requesting clinical investigations for identified patients eg: haematology tests
- Making decisions about the clinical problems of identified patients
- Developing systems for patient recall
- Planning and conducting health promotion and other clinics

- Interpreting and using the results from clinical investigations of identified patients
- Assessing and making a preliminary diagnosis of clinical problems
- Undertaking comprehensive clinical examinations of patients
- Surveying patients' needs
- Using different techniques for obtaining information
- Weighing up clinical evidence
- Justifying your clinical practice
- Justifying changes to your clinical practice
- Asking relevant questions about the effectiveness of your clinical practice
- Reflective decision-making
- Monitoring your clinical practice
- Assessment of clinical costs and benefits
- Reviewing patterns of care
- Experimenting with different treatments
- Investigating the effectiveness of treatments
- Evaluating professional practice

CHILD ABUSE/CHILD PROTECTION

- Detecting non-accidental injury in children
- Communicating with at-risk families
- Probing unexplained injuries, bruising or bedwetting
- Having a clear understanding of your appropriate role in prevention of child abuse and neglect
- Deciding whether to intervene or not in cases of suspected abuse
- Observing interactions of both parents and siblings with at-risk children
- Recognising inconsistencies in parents' descriptions of their child's accidents
- Dealing with parents attending case conferences
- Liaising/communicating with the police and other authorities

- Understanding your responsibilities when dealing with at-risk children
- Using approved guidelines on referral procedures
- Being aware of different types of child abuse
- Identifying child neglect or failure to thrive
- Being able to recognize good and bad practice when dealing with child abuse
- Discussing potential further action with other care workers
- Coping with stress when questioning a family about child abuse
- Trying to make an early identification of child abuse
- Detecting persistent injuries
- Understanding child protection legislation
- Providing on-going support for families connected with child abuse
- Coping with the emotional reaction of other care workers when faced with child abuse
- Distinguishing between neglect, physical, sexual and emotional abuse
- Knowing when to alert the authorities
- Discussing individual children with a paediatrician
- Coping with the conflict between need to intervene and loyalty to the family
- Obtaining 'clues' to potentially harmful substances
- Having a clear understanding of your legal responsibilities for protecting at-risk children

MANAGEMENT

- Dealing with personnel management issues
- Providing performance feedback to staff
- Controlling financial resources
- Planning and organizing workload
- Writing management reports
- Generating income for your organization
- Designing and implementing an audit

- Accessing available resources for organizational development
- Developing joint working arrangements with others
- Actively facilitate organizational improvements
- Undertaking business planning activities
- Developing a shared vision of organization goals
- Converting organization goals into personal action plans
- Consulting with colleagues to discuss service provision

NURSE PRESCRIBING

- Providing patients with instructions on the correct use of drugs
- Providing patients with information on the significant side-effects of drugs
- Discussing with patients the risks and benefits of suitable drugs
- Understanding your own practice in relation to legal issues
- Recommending and discussing with patients the most suitable drugs for their condition
- Accurate and safe dispensing of drugs
- Deciding which drugs are most suitable for a patient and his/her condition
- Obtaining a full history of the patient's health/sickness

SPECIALIST CARE

- Promoting risk reduction of lymphoedema in the arms
- Promoting breast awareness as a health promotion activity
- Understanding and identifying the implications for individuals/friends/family
- Recognising the risk factors for developing cancer
- Understanding the reasons for breast screening
- Providing patients with instructions on the correct use of contraceptive devices
- Providing patients with information on the significant side-effects of contraceptive devices
- Discussing with patients the risks and benefits of suitable contraception

- Understanding your own practice in relation to legal, religious and cultural issues
- Recommending and discussing with patients the most suitable contraception for their needs and lifestyle
- Accurate and safe dispensing of contraceptive devices and drugs
- Deciding which contraceptives are most suitable for a patient
- Obtaining a full sexual health history from the patient
- Applying the principles of legal and ethical consent when dealing with vulnerable client groups
- Knowing the statutory legislation relating to your work
- Understanding how recently developed contraception works physiologically
- Knowing the appropriate techniques for taking swabs for sexually transmitted infections
- Understanding the implications of cervical cytology reports
- Contributing to the activities of your local professional interest group
- Undertaking appropriate health education with individuals and small groups
- Setting up and running clinics
- Being able to provide counseling for patients and their families
- Being able to provide teaching and training

SECTION 9

PUBLICATIONS REPORTING EARLIER STUDIES THAT HAVE USED THE HENNESSY-HICKS QUESTIONNAIRE

For details on the psychometric procedure adopted in developing the questionnaires in this document see:

Hicks, C , Hennessy, D and Barwell, F. (1996) The development of a psychometrically valid training needs analysis instrument for use with primary health care teams. **Health Services Management Research** 9 262 -272

Other publications:

Hennessy D, Hicks C, Kawonal Y and Hilan A (2006) A methodology for assessing the professional development needs of nurses and midwives in Indonesia: paper 1 of 3. **Human Resources for Health** 4(8)

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