

Developing nurse match: An instrument for assessing personal nursing values against a set of preferred nursing values

Elaine Hogard¹ and Roger Ellis^{2*}

¹Northern Ontario School of Medicine, Canada

²University of Chester, University of Ulster, and Buckinghamshire New University, UK

Abstract

This paper reports the development of Nurse Match (NM) a values-based self-report instrument for assessing the nature, relative importance and emotional significance of personal values about nursing held by nurses, nursing students or those aspiring to be nurses. The NM instrument is intended initially for use in Value Based Recruitment (VBR) but can also be an aid for the charting of professional development in initial training and professional development. VBR has been introduced in the UK to address the concern that standards in nursing may be falling with students and practitioners not having the right nursing values. The development of the NM instrument and its theoretical and methodological background was first reported by Ellis et al. [1] and reference is made to that below. The instrument requires respondents to apply constructs to entities and these were chosen to indicate Nursing values. These values were derived from the literature; expert views; and most recently the preferred attributes based on NIPEC research [2], and then combined by NIPEC into six nursing values. The primary aim of the work described in this paper was to continue development of NM by piloting the instrument with a cohort of nursing students, scoring the resulting value profiles, refining scoring protocols; and obtaining feedback on user experience. A secondary aim was to explore the relationship between cohort scores on the pilot instrument and on a number of other measures of nursing competence including personal statements, selection interviews and a Multiple Mini Interview (MMI) selection process. Administration of the instrument and its scoring worked well and the scoring process for comparing respondent profiles on nursing values was refined. The instrument discriminated effectively between the nursing students responding and results conform to a normal distribution. The secondary aim of correlating with existing measures was inconclusive and is a work in progress with initial indications being of low or no correlations between the various measures of nursing values and competence. The instrument has face and content validity identifying the important nursing values, was interesting to respondents and easy to understand and complete. As a self-report measure it was considered to be superior to the personal statement used widely at present in VBR Nursing recruitment.

Introduction

Values Based Recruitment (VBR) is an important programme of work within the UK National Health Service. It was devised after a mandate DH [3] from government to Health Education England (HEE) to deliver high quality, effective, compassionate care: developing the right people with the right skills and the right values. The emphasis on the 'right' values is a response to a widespread concern that those recruited to nursing might not develop and evidence appropriate professional behaviour and values.

VBR is an approach which recruits students, trainees or employees on the basis that their individual values and behaviours align with the values of the NHS Constitution [4]. It is about enhancing existing processes to ensure that the NHS recruits the right workforce not only with the right skills and in the right numbers, but with the right values to support effective team working and excellent patient care and experience HEE [5].

There has been an increasing focus on the values agenda across the NHS, in part due to the Francis report [6] which highlighted the vital role of the workforce in providing high quality and safe healthcare. In particular, the report emphasised the importance of staff values and behaviours for the level of care and patient experience [7,8].

The Department of Health, Social Services and Public Safety

(DHSSPS) Education Strategy Group (ESG) identified a need for streamlining the application and selection processes for Higher Education Institutions (HEIs) during 2011. The Northern Ireland Practice and Education Council for Nursing and Midwifery (NIPEC) was commissioned by the ESG to undertake a project to develop a strategy which would optimise efficiency of application and selection processes to identify individuals who display attributes that are valued.

Phase Two of that project focussed on the 'attributes which are valued to realise future potential in a career in nursing'. The NIPEC report to ESG, NIPEC [2], considered that it had 'added to the growing evidence in relation to the attributes that could be used in selecting students'. The values and attributes used in the NIPEC project are set out in NIPEC [2], at Appendix A and B.

Ellis et al. [1] reported the development of a new instrument-Nurse Match-to measure the nursing values held by respondents. The instrument was intended to support the value based recruitment of student nurses. Whilst other instruments existed purporting to

Correspondence to: Roger Ellis, Social and Health Evaluation Unit, School of Nursing, Ulster University, UK, E-mail: rogerellis2@icloud.com

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measure relevant values, none had been dedicated specifically to nursing values. Other methods used to gauge values including the assessment of a personal statement were considered to be of doubtful validity and reliability.

Ellis *et al.* [1] located the new values based instrument, theoretically and empirically in a recent review of available instruments to measure identity and hence values [9]. From the wide range of instrument and approaches they considered Passmore *et al* recommended Weinreich's Identity Structure Analysis (ISA) and instruments constructed in its framework using the associated Ipseus software. It was therefore decided to construct the Nurse Match instrument using this approach the utility of which had been demonstrated in a number of studies described in Weinreich and Saunderson [10].

An Ipseus instrument requires respondents to apply a number of bipolar constructs to entities representative of the self and its social world. These constructs and entities are chosen to reflect the salient features of the area being studied. In this case the bipolar constructs were chosen to represent key nursing values. The paper listed the nursing values used to determine the constructs in the new instrument, called Nurse Match (NM), and their derivation from the literature and interviews and focus groups with expert members of the nursing profession. The paper demonstrates how the instrument offers an in depth analysis of the respondent's position regarding key nursing values and how initial results using an early version of the instrument demonstrated its power to identify and distinguish value orientations of individuals.

The primary objective of the follow-up work described in this paper was therefore the development and assessment of the Nurse Match instrument to ensure that it was a feasible and relatively simple measure easily understood and managed. The results recorded through the instruments software had to provide a way of systematically appraising a respondent's personal nursing values against a set of values preferred by the profession. In this sense the instrument allowed respondents responses to be 'matched' with an ideal set as agreed by the profession. In this case the profession's view was captured in the six NIPEC values or 'themed attributes' (Table 1).

It was also important to confirm that the instrument appeared valid to respondents as well as relatively easy to understand and complete and so feedback was sought from the respondents.

A secondary objective was to explore the relationship between cohort scores on the pilot instrument and on a number of other measures of nursing values; personal statements, selection interviews and an MMI selection process.

Method

Measures

Two measures were used.

1. The Nurse Match (NM) instrument consisting of 20 bi-polar nursing values and 13 entities constructed and presented on Ipseus software (Table 2 and 3).

2. A Feedback Questionnaire (Appendix C).

The values used in the NM instrument were derived from a literature search, interviews with expert nurses individually and in groups; ad trials with experienced and well respected nurses. They were aligned with NIPEC attributes and values. Each was presented

Table 1. The entities used in Nurse Mismatch.

	Entity wording
01	Ideal self
02	Real work self
03	Real home self
04	Real self, under pressure
05	Real self, two years ago
06	Real self, in five years' time
07	The person I most dislike
08	A model nurse
09	A ward sister
10	A typical patient
11	A bad nurse
12	My best friend
13	My parents

as a bi-polar construct offering alternative attitudes to the value. One pole of each construct had been identified as the preferred option from a professional nursing point of view. The entities are aspects of self and people from the workplace and home context.

The software presented each respondent with a nine-point, semantic differential scale with centre zero. A click on the preferred pole scored from 1 to 4 and on the alternative pole from -1 to -4. The centre zero was used by the respondent if they could not decide between polar values.

Respondents were asked to apply the constructs to all aspects of self (including aspirational self) and all other people in terms of the attitudes or values they perceive them to hold (e.g. at work I ... am prepared to challenge someone more senior if I feel it is in the interests of the patient/would not challenge someone more senior in any circumstances).

Data output was presented as an Ipseus report which was produced by the software based on the judgements made by the respondent. The Ipseus report covers a number of identity parameters concerning use of constructs derived from the theoretical framework of Identity Structure Analysis (ISA). For the NM instrument the parameters focussed upon were: choice of pole for each construct; structural pressure (stability) that is their importance and significance in making judgements; and the emotional loading of each construct. These were used to calculate a score (S) for each of the twenty NM nursing values (see Appendix B for the details of the calculation).

Each of the six value themes (Person Centeredness (PC), Accountability (ACC), Trust (T), Integrity (I), Commitment to Personal Development (CPD), Teamwork (TW), is composed of a set of NM values or attributes (Table 3). The attributes and themes they were alligned with were recommended by the partner School of Nursing having proved their worth in Phase Two of the ERC project-NIPEC [2] at Appendix C.

The score for each major value (S^{TOT}) is the sum of the S scores on the constituent NM values. The mean of the six S^{TOT} scores is the individual's score on NM for assessment purpose see Appendix A: Table 3 for the calculation.

The second measure used was a feedback questionnaire (Appendix C). It was completed by all respondents immediately following completion of the instrument. A free text box was available.

Respondents

The respondents (N = 63) were first year students at the School of

Table 2. The bi-polar dimensions of value used in NM.

	Preferred option	Alternative option
01	can critically assess their own thinking and behaviour	finds it difficult to critically assess their own thinking and behaviour
02	believes that patient dignity and human rights must take precedence at all times	feels that there are times when the patient's dignity and human rights should be temporarily set aside
03	listens carefully and is tuned into the needs of patients and work colleagues	finds listening a distraction and prefers just to get on with the job
04	is an excellent communicator and is always understood	is a poor communicator and is often misunderstood
05	usually understands and relates well to others	often seems to misunderstand and have problems relating to people
06	can be relied upon to deliver on their commitments	is only human and may not meet commitments due to real world constraints
07	manages time and workloads with little supervision	works best when being managed by someone
08	is open and honest at all times	will sometimes keep information from others in the greater interest of all concerned
09	generally understands people and situations	sometimes misunderstands people and situations
10	is prepared to challenge someone more senior if they feel it is in the interests of the patient	would not challenge someone more senior in any circumstances
11	owns their work and takes personal responsibility for their decisions and actions	adheres strictly to guidelines and instructions, which are at fault if things go wrong
12	enjoys making decisions within their area of competence	in a shared area of competence prefers the other person to take decisions
13	has no difficulty influencing people and getting them to follow instructions	finds it hard to influence people and get them to follow instructions
14	would take all the time needed to do a task properly	would sometimes take shortcuts in the interests of saving time
15	often pauses and reflects on how things have gone	rarely takes time to reflect on how things have gone
16	works hard to continue their learning and development throughout their career	thinks that learning is for student nurses and qualified nurses should focus on delivering nursing care
17	is always thinking about the other person	focuses on own needs and priorities
18	prefers to achieve things by working closely with others in a medical team	prefers to achieve things through individual initiative
19	believes that the safety of patients must come before everything else	accepts that realistically patient safety will sometimes suffer as a result of pressures on the health service
20	believes that resource constraints are no excuse for a lack of kindness, compassion and sympathy	accepts that resource constraints mean that modern nursing must prioritise technical and medical competencies over kindness compassion and sympathy

Table 3. Scoring matrix for six value themes assessed using NM construct values.

Constructs (20)	Person Centeredness (PC)	Account Ability (ACC)	Trust (T)	Integrity (I)	Commitment Personal development (CPD)	Team Work (TW)	Total Use
1	X -1	X -1	X -1				3
2	X -1	X -1	X -1				3
3		X -1				X -1	2
4						X -1	1
5	X -1	X -1					2
6					X -1		1
7	X -1						1
8		X -1		X -1			2
9	X -1	X -1					2
10		X -1		X -1			2
11		X -1			X -1		2
12		X -1	X -1		X -1		3
13		X -1	X -1	X -1			4
14	X -1					X -1	2
15	X -1					X -1	2
16		X -1	X -1	X -1		X -1	4
17		X -1	X -1	X -1		X -1	4
18		X -1				X -1	2
19		X -1			X -1	X -1	3
20	X -1					X -1	2
Use by Value	8	14	6	5	4	9	

Nursing nearing the end of the final semester of the year.

These students were from the September 2014 cohort and had been assessed using personal statements (during screening) and structured selection interviews. A number of the cohort (N = 110), of which our volunteers were a sub-set (N = 63), had volunteered to participate in a pilot of an MMI value based assessment process (based on the same nursing values used in the NM instrument). They were therefore well-

positioned to provide feedback on the MMI and NM Values Based Recruitment (VBR) selection processes.

The NM study was held after the MMI pilot procedure that took place on the 23rd March 2015. Those respondents (N = 110) who had taken part in the MMI study had been asked by School of Nursing staff if they were willing to participate and they were offered the inducement of a free lunch of sandwiches and coffee and participation in a draw

for retail vouchers of £100 and £200 respectively. Sixty-three students agreed to participate.

Procedure

All the September 2014 cohort entering the School of Nursing were given Student Unique Identifier (SUI) numbers which were used to identify their personal statement scores, their initial interview scores, their MMI scores and their scores on the NM VBR instrument and, subsequently, their scores on end of year modules.

On 5th May 2015, 63 first year students completed the NM pilot instrument in a group setting (a computer laboratory).

The Ipsus software was downloaded and the NM instrument was completed by all 63 respondents each of whom sat at a desk at their own terminal well-spaced out in a computer room.

A presentation was delivered to brief all respondents on the procedure to be followed. Respondents were requested not to consult on responses.

Immediately after completion of the instrument each respondent completed a feedback questionnaire (Appendix C). A free text box was available.

Results

Values based appraisal: data output

The full set of data on the respondents’ appraisals is set out, rank ordered, in Appendix A: Table 2. A subset of the data with mean scores is presented in Table 4 below as an illustration of the nature of output for assessment or screening purposes.

The outcome is an S^{TOT} score for each nursing value and a mean S^{TOT} score for each respondent for the set of six values.

The results for individuals can be easily compared with scores for the cohort. Either as a simple rank ordering as in Appendix A: Table 2 or they can be presented in a more informative manner as individual or cohort scores (Figure 1).

Statistical properties of the data

Table 5 details a full range of responses and similar standard deviation of nursing values (SD).

S^{TOT} scores on every major value have a distribution that approximates to normal. Because of constraints on space only the histogram of the mean of individual scores on all six major values is offered as evidence see Figure 2 (one outlier removed).

Secondary correlation study

A subsidiary study explored the correlation of the NM scores with measures of nursing competence: personal statements, selection

interviews, end year module scores and an MMI selection process. Work underway on correlation seems to be suggesting that there is virtually no linear relationship between appraisal measures - see Table 6 which typifies what is being found. They do not appear to be measuring the same thing. The relationship between values and observed behavior is indeed a complex one to the extent of invalidating the whole VBR process some researchers would say. Other measures seem to be mired in the same bog of complexity in human behavior over time. I am not keen to highlight the fact that NM inhabits the same ‘twilight zone’.

Feedback: the responses to the questionnaires (see the questionnaire at Appendix C) on the experience of completing the pilot instrument were collated and the data on responses to the questions analysed. See comment below and Table 7 below for a summary of the findings and comparison with the MMI feedback.

Text from the ‘free text box’ was reviewed and the findings summarised in Appendix A: Table 8.

Summary of feedback: the NM instrument was seen by respondents to:

- have face value and
- identify most important nursing values,
- be interesting,

0027 Characteristic nursing values	S ^{TOT} score (%)
Person Centredness (PC)	68.00
Accountability (ACC)	66.39
Trust (T)	61.79
Integrity (I)	59.91
Commitment Personal Development (CPD)	55.54
Teamwork (TW)	50.61
Mean	60.37
Cohort: Characteristic nursing values	Mean S ^{TOT} score (%)
Person Centredness (PC)	71.00
Accountability (ACC)	58.33
Trust (T)	56.75
Integrity (I)	52.59
Commitment Personal Development (CPD)	56.38
Teamwork (TW)	58.27
Mean	58.89

Figure 1. One respondent’s scores compared with cohort scores.

Table 4. Section of NM[™] values based results table before rank ordering.

Student	Person Centredness (PC)	Accountability (ACC)	Trust (T)	Integrity (I)	Commitment Personal Development (CPD)	Teamwork (TW)	Mean
SUI0001	85.61	61.48	50.76	54.48	51.59	60.96	60.81
SUI0003	76.81	68.98	70.90	57.47	72.13	58.75	67.51
SUI0004	32.34	13.80	7.07	-12.90	32.71	18.34	15.22
SUI0005	46.42	35.19	24.25	38.34	43.14	33.70	36.84
SUI0006	54.58	43.23	36.03	45.08	35.65	39.85	42.40
SUI0007	82.32	62.52	65.57	40.21	89.73	68.26	68.10

Table 5. Simple descriptive statistics for the S^{TOT} scores on the themed values.

Nursing Value	Min	Max	Mean	SD
Person Centredness (PC)	32	98	73	14
Accountability (ACC)	14	91	60	15
Trust (T)	7	98	58	19
Integrity (I)	-13	93	54	19
Commitment Personal Development (CPD)	9	94	58	19
Teamwork (TW)	18	90	60	14
Mean	15	93	60	15

Table 6. Pearson Correlation between S^{TOT} scores on NM themed values.

Moderate to strong correlations: p-Value = 0.000 for all							
PC		0.85	0.695	0.716	0.515	0.85	0.852
ACC	0.85		0.886	0.868	0.758	0.866	0.984
T	0.695	0.886		0.762	0.79	0.724	0.928
I	0.716	0.868	0.762		0.458	0.836	0.872
CPD	0.515	0.758	0.79	0.458		0.513	0.779
TW	0.85	0.866	0.724	0.836	0.513		0.887
Mean	0.852	0.984	0.928	0.872	0.779	0.887	

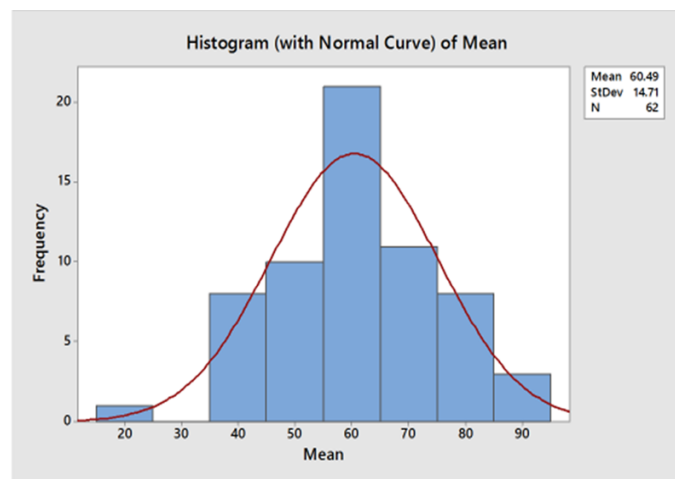


Figure 2. Distribution of mean scores on themed values.

Table 7. Weak negative or no linear relationship between NM values and MMI values.

Pearson's r: 5% significance level								
% scores on MMI values								
		PC	ACC	T	I	CPD	TW	GLOBAL
S ^{TOT} scores on NM values	PC_1	0.17	0.25	-0.09	-0.08	0.11	-0.12	-0.11
	p value	0.19	0.05	0.50	0.52	0.42	0.38	0.41
	ACC_1	-0.11	-0.24	-0.09	-0.13	0.15	-0.12	-0.04
	p value	0.41	0.06	0.49	0.33	0.25	0.38	0.74
	T_1	0.01	-0.19	0.02	-0.02	0.12	-0.11	0.07
	p value	0.94	0.14	0.87	0.87	0.37	0.42	0.60
	I_1	-0.08	-0.28	-0.14	-0.11	0.11	-0.04	-0.05
	p value	0.54	0.03	0.30	0.42	0.41	0.78	0.73
	CPD_1	0.08	-0.07	0.06	-0.05	0.17	-0.07	0.09
	p value	0.53	0.58	0.67	0.71	0.19	0.61	0.48
	TW_1	-0.08	-0.27	-0.1	-0.07	0.11	-0.1	-0.04
	p value	0.56	0.04	0.46	0.57	0.41	0.44	0.74
	MEAN_1	-0.05	-0.24	-0.06	-0.09	0.15	-0.1	-0.01
	p value	0.68	0.06	0.67	0.52	0.27	0.45	0.97

Note: - indicate Centre Pearson r heading

Table 8. MMI and NM: feedback from students compared.

	MMI	NM	
Student comment (N = 110)	%	%	Student comment (N = 63)
A positive experience	86	98	Easy to complete
A fair assessment tool	79	95	Easy/mostly easy to understand
Tested their suitability for profession	74	94	No key nursing values missing
Could show understanding better than interview	71	90	Interesting to complete
Better way to select than current style of interview	58	90	Not too challenging to complete
Unsure about this	31	84	Responses easy intuitive
		83	Issues raised were important
ASSESSORS COMMENT		81	All questions asked made sense
Wide range of attributes	92	81	Not hard work sometimes testing
Appropriate way of Assessing	81	10	Had a little bit of difficulty here and there
		8	Felt they needed more time to complete
			Free text
			Different but easier than interviews/MMI
			Better or worse was conflicted

- be easy to understand and complete and
- it was said to be a 'different experience'.

Some concern was expressed about

- the usefulness of a self-response instrument in an assessment of values compared with an assessment of responses to 'real situations' (contrived) as in the MMI stations.

Note: the two processes appear to measure different things and are complementary

- the MMI assessment being based on subjective observation and scoring on of a set of values,
- the Nurse Match VBR process being a self-report assessment using the same set of values.

Discussion

The primary aim of the work was to continue development of NM by piloting the instrument with a cohort of nurses, scoring the resulting value profiles and obtaining feedback on user experience.

The choice of NM values (nursing attributes) was found to be well aligned with recently researched attributes and six value themes.

Presentation and use of the instrument worked well and the scoring process for comparing respondent profiles on nursing values discriminated effectively between nursing students. Statistically it produced a normal distribution of scores overall, and for each major value, with means, range of scores and variance that were psychometrically acceptable.

The instrument was seen by respondents to have face and content validity identifying the important nursing values, was interesting, easy to understand and complete and was said to be a different experience. As a self-report measure it was considered to be complementary to other modes of assessment such as MMI.

Just asking people directly about themselves can offer revealing, fascinating and rich data. By their very nature these internal states and perceptions are not easily assessed by direct observation. However valid self-reports rely on self-awareness, personal honesty and good judgement so, particularly with young people, there may only be modest, if any, agreement between construal of self and appraisal by others.

There is clearly a need for complementarity in appraisal of nurses and candidates for both developmental and recruitment purposes.

A secondary aim was to explore the relationship between cohort scores on the pilot instrument and a number of other measures of nursing competence; personal statements, selection interviews and an MMI selection process.

Within the appraisal processes such as NM and MMI used in this project there is clear evidence of positive linear relationships between measures of value themes. This seems reassuring about validity.

However, while this secondary aim is a work in progress, initial indications are of low or no linear relationship, positive or negative, between the various measures of nursing competence. It seems that each mode of assessment has been of practical use in recruitment and selection but each says something different about the characteristics of the nurse or candidate and their potential as nurses.

The most common approach used at present for an initial screening of values is a Personal Statement written by the candidate and assessed by expert markers. This is a questionable procedure with regards to validity, reliability and feasibility. On the basis of the work completed on NM and reported in this paper and Ellis et al. [1] it is suggested that Nurse Math is a more valid, reliable and cost effective method for initial screening of applicants than the Personal Statement.

The lack of a positive linear relationship between measures may be because there is no empirical evidence to suggest that future performance in the role of nurse can be predicted with any certainty and so serendipity rules.

However, it seems that someone with an appropriate set of nursing values today will probably perform more effectively later in life than someone with a poor set of nursing values today. On the evidence of this piece of work, NM can be a most effective, efficient and systematic way to get at and assess those values.

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