Vol 3 | Issue 1 | Pages 95-102

Journal of Nursing and Practice

ISSN: 2578-7071

Review Article

DOI: 10.36959/545/368

Is the Amsterdam Preoperative Anxiety and Information Scale (APAIS) a Valid Tool in Guiding the Management of Preoperative Anxiety in Adult Patients? A Literature Review

Sarah Spanner[1] and Lynn Sayer[2]*

[1]*Final Year Adult Nursing Student, King's College London, United Kingdom*

[2]*Senior Lecturer, Department of Adult Nursing, King's College London, United Kingdom*

Abstract

Background: Preoperative anxiety is a common problem that affects 60-85% of patients undergoing elective surgery and results in adverse outcomes. However, health professionals' often have little time to fully assess and manage preoperative anxiety. As a consequence the Amsterdam preoperative anxiety and information scale (APAIS) was developed to assess anxiety and the patient's need for information. This literature review aims to examine the validity of APAIS. These papers were critically appraised using a tool for quantitative studies.

Method: A systematic search was conducted using the databases CINAHL, Medline, and PubMed. Seven quantitative studies were identified that sought to determine the validity of APAIS. All papers showed APAIS to have good internal and external validity and good reliability.

Conclusion: The review found that APAIS has the potential to aid the management of preoperative anxiety.

Keywords

Anxiety, Preoperative period, Anaesthetics, Amsterdam preoperative anxiety and information scale (APAIS), Validate

Key Points

- Anxiety is an issue for over half of surgical patients.
- APAIS is a short and quick self-completion tool, which can assess pre-operative anxiety and the need for information.
- Evidence indicates APAIS is a valid and reliable tool.
- APAIS could guide individualised care for patients undergoing surgery.

Anxiety is a common problem within the preoperative period, which can affect both perioperative and postoperative outcomes. Heightened anxiety levels are unpleasant and can lead to difficult anaesthetic induction, higher doses of anaesthesia and analgesia, and prolonged hospital stay [1]. Due to the potentially harmful impact of preoperative anxiety, it is necessary to consider ways in which anxiety can be managed to improve patient outcomes and satisfaction.

Even though preoperative anxiety is experienced by over half of patients undergoing surgery, Shevde and Panagoloulos [2] and Mitchell [1] report the prevalence to be between 60-85% within the UK, there are currently no standardised guidelines for how to assess and manage anxiety in this population. The recent NICE [3] guidelines for preoperative tests still fail to address preoperative anxiety, despite mentioning that preoperative testing can increase patient anxiety. For this reason, assessing the anxiety levels of patients undergoing surgery is important in identifying those who have excessive levels of anxiety and are at a higher risk of experiencing poor outcomes postoperatively.

Modern elective surgery has resulted in an overall reduction in the time spent in hospital, which has given anaesthetists less time to accurately assess and alleviate preoperative anxiety [4-6]. A thorough preoperative assessment requires 27 minutes, however usually only 5-15 minutes is available, meaning that patients' concerns can go unaddressed [5]. One of these unaddressed concerns is preoperative anxiety.

***Corresponding author:** Lynn Sayer, Senior Lecturer, Department of Adult Nursing, King's College London, United Kingdom

Accepted: October 03, 2019

Published online: October 05, 2019

Citation: Spanner S, Sayer L (2019) Is the Amsterdam Preoperative Anxiety and Information Scale (APAIS) a Valid Tool in Guiding the Management of Preoperative Anxiety in Adult Patients? A Literature Review. J Nurs Pract 3(1):95-102

Copyright: © 2019 Spanner S, et al. This is an open-access article distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.

SCHOLARS.DIRECT

Consent must be obtained from the individual before carrying out any procedure. However, for consent to be valid, the individual must receive the relevant information about the nature and the purpose of the procedure [7]. Additionally, information provision has traditionally served as an antidote for preoperative anxiety, which evidence shows can be an effective strategy [6]. Yet, there is also evidence that shows information can trigger preoperative anxiety [8]. Miller and Mangan's research claimed that individuals fall into two groups: 'monitors', who sought out as much information as they could, and 'blunters', who looked for distractions opposed to information. Misjudging the needs of these two groups can result in increasing anxiety in the preoperative period as sometimes monitors are given too little information and blunters are given too much [9].

Pritchard [6] saw the dilemma that healthcare professionals face with increasing demands and reduced time to determine the psychological wellbeing of patients. Currently, there are no guidelines that address this issue and healthcare professionals are required to use their clinical judgement to determine how anxious their patient is and what intervention is required to alleviate their anxiety. Badner, et al. [4] provided evidence that such clinical judgement can often be subjective and inaccurate. The Amsterdam preoperative anxiety and information scale (APAIS) has been suggested by both Pritchard [6] and Mitchell [1] as a quick to complete tool that could be used to bring together the assessment of anxiety and the need for information. APAIS is a six-item questionnaire developed by Moerman, et al. [10]. Divided into two sections, the tool addresses anxiety and the need for information (Table 1).

Search Strategy

The systematic search question was: Is APAIS a valid tool in guiding the management of preoperative anxiety in adult patients? Publications from 1996, when the APAIS tool was designed, to 2017 were identified through searching three databases: CINAHL, Medline, and PubMed. The search strategy combined the thesaurus and free text terms for the population, intervention and outcome facets as presented in Table 2.

The search was conducted to identify all papers that researched the validity of APAIS. Selection bias was reduced through the judicious use of the interface truncations and Boolean operators. Hand searching the reference lists of all retrieved papers was used to identify any further studies missed through the database search. The inclusion/exclusion criteria shown in Table 3 were applied, which yielded 103 papers. Titles and abstracts were then reviewed to identify eligible papers. Duplicates were removed as were papers that did not meet the inclusion criteria to yield 11 papers. Four further studies were excluded after reading the full papers (Figure 1).

The seven studies were all quantitative as expected to answer a question regarding validity, however none were randomised controlled trials (RCTs). Instead all the studies were cross-section studies comparing the use of the tool to other measures. The quality of all included studies was assessed using a tool developed by Caldwell, et al. [11]. Once the seven papers were identified, the tool was used as a step by step guide to assess the quality of the studies (Table 4).

Table 1: The Amsterdam preoperative anxiety and information scale.

APAIS Questions	Not at all Extremely				
	1	2	3	4	5
1. I am worried about the anaesthetic.					
2. The anaesthetic is on my mind continually.					
3. I would like to know as much as possible about the anaesthetic.					
4. I am worried about the procedure.					
5. The procedure is on my mind continually.					
6. I would like to know as much as possible about the procedure.					

Table 2: PICO structure of the question.

Population	Intervention	Comparison	Outcome
Adults undergoing surgery	Amsterdam Preoperative anxiety and information scale	Already validated anxiety assessment tools	Comprehensive guide for assessing preoperative anxiety

Adapted from Aveyard and Sharp [23].

Table 3: Inclusion/exclusion criteria.

Inclusion Criteria	Exclusion Criteria
English language	Non-English language
Adults - aged over 18 years and over	Child population - up to 18
Validating APAIS	Studies solely validating other anxiety assessment tools.

Figure 1: PRISMA flowchart.

Results of the Review

APAIS aims to assess two concepts, anxiety and need for information. Six out of the studies conducted factor analysis to determine whether the instrument assesses these two concepts. As can be seen from Table 5, five studies reported these two concepts with eigenvalues at one or above. One is the level required for factors to be considered valid to retain in an instrument. The results from the factor analysis conducted by Maurice-Szamburski, et al. [12] identified three factors: Anxiety due to anaesthetic; anxiety due to surgery and need for information, which were explored using different tests: the root mean square error of approximation (RMSEA) and the comparative fit index (CFI). RMSEA requires a value less than 0.08, CFI requires a value above 0.9. The results from Maurice-Szamburski, et al. show that APAIS has good internal validity, with a RMSEA of 0.069 and a CFI of 1.00. The consistency in results provides evidence to suggest that APAIS has good construct validity.

The reliability of a tool can be assessed by conducting Cronbach's alpha (C-α), which measures the internal consistency of an instrument. APAIS has six items that either measure anxiety or the need for information. All the studies used C-α to determine the internal consistency of APAIS. Table 6 summarises the results from each paper.

A C-α value above 0.70 is acceptable to conclude good internal consistency [13]. All of the studies show good internal consistency for the anxiety element of the tool, whereas two studies show that the internal consistency for the 'need for information' falls short of the desired value [10,14]. The probable reason for these lower C-α values is that there are only two items under need for information and if a questionnaire is too short, the value of C-α will be reduced [13]. Overall the range of C-α values for the need for information (0.68-0.90) shows satisfactory internal consistency. As an instrument cannot be valid if it is unreliable [15] and since construct validity has already been shown, the evidence points to the reliability of APAIS despite the two C-α values below 0.70. Overall, the evidence suggests that APAIS is a reliable instrument.

A number of tools which have already been validated were used as comparison tools for the APAIS. Spielberg's state-trait anxiety inventory (STAI) is an instrument that assesses state anxiety by asking respondents to consider how they feel at the time and trait anxiety by asking how respondents feel generally [16]. Five papers compared APAIS to STAI [10,14,17-19]. Comparing APAIS to STAI is required to determine the concurrent validity, which explains how well the instrument can distinguish the differing levels of anxiety and need for information within a population at a given time [15]. To assess this, a correlation coefficient is calculated and it was hypothesised that the anxiety subscale of APAIS would correlate highly with STAI (> 0.60), and the need for information subscale would have a low correlation (< 0.30) [10]. Table 7 summarises the results from each paper.

The correlations suggest that APAIS does accurately assess anxiety although the evidence to support the need for information subscale was not as strong with only two studies measuring the correlation. One study shows that the anxiety subscale of APAIS only moderately correlates to STAI [17]. Participants in this study reported that the state subscale of STAI was harder to understand and answer, additionally STAI does not relate specifically to preoperative anxiety and these two points most likely influenced the results. The fact that STAI does not specifically assess preoperative anxiety shows a limitation in the study design. However, the similarity in results that were in line with the hypothesis, suggest that APAIS does accurately assess anxiety, but caution needs to be applied when using STAI as the 'gold standard' comparator tool.

Evaluation du Vécu de l'Anesthésie (EVAN) is a, mul-

Table 4: Summary of included research studies.

Author; year; aim; country	Method	Findings	Comments
Moerman, et al. (1996) [10] To develop a screening instrument for use in the preoperative period. Netherlands	320 patients completed the APAIS. 62.2% female 200 patients completed the STAI-state. Reliability - Cronbach's Alpha. Validity - construct (factor analysis), concurrent (correlation with STAI-state).	Validity - two factors, correlates well with STAI-state. Reliability - Cronbach's alpha > 0.68. Cut-off score 11. Anxiety: women higher score. Men and previous surgery lower score. Need for information: previous experience lower score. High information score = high anxiety score.	Large sample size (range of ages and good gender ratio). High percentage of patients had previous surgery 75.6%. Low number underwent major surgery.
Mohd Fahmi, et al. (2015) [17] Develop and validate the Malay version of APAIS. Malaysia	200 patients completed the demographic questionnaire, Malay-APAIS and STAI-state. Reliability - Cronbach's Alpha. Validity - construct (factor analysis), concurrent (correlation with STAI-state).	Validity - two factors, correlates well with STAI-state. Cut-off score 11. Reliability - Cronbach's alpha > 0.90 Anxiety - women higher score, no previous surgery higher score, intermediate/high risk surgery higher score. Need for information - previous surgery lower score. High information score = high anxiety score.	Good ratio between no previous surgical experience and previous surgical experience. No control group. Majority of sample female 74%.
Maurice-Szambursk, et al. (2013) [12] Translate APAIS into French and evaluate psychometric properties. France	175 patients completed APAIS and EVAN post-op. Reliability - Cronbach's Alpha. Validity - construct (factor analysis), concurrent (correlation with EVAN).	Validity - three factors, correlates with EVAN. Reliability - Cronbach's alpha > 0.76 > 55 yrs or female higher score for anxiety about anaesthesia and need for information.	Research took place in three hospitals. Good ratio between genders (57% female). No control group.
Nishimori, et al. (2002) [14] Translate and validate APAIS in Japan. Japan	137 participants (completed APAIS and STAI-state) 37.3% female. Reliability - Cronbach's Alpha. Validity - construct (factor analysis), concurrent (correlation with STAI-state).	Validity - two factors, correlates well with STAI-state. Reliability - Cronbach's alpha > 0.68 Anxiety - women higher score (APAIS). High information score = high anxiety score.	Two teaching hospitals - increased variety within population. High response rate (92%).

Boker, et al. (2002) [19] To compare three anxiety scales: VAS, APAIS, STAI. Canada	197 participants 55.8% female. Completed all three questionnaires before and after preoperative assessment, before and after seeing anaesthetist. Pearson's correlation and Cronbach's alpha.	APAIS had the highest completion rate. Validity - VAS strong correlated with STAI and total APAIS, total C correlated with STAI. Reliability - Cronbach's alpha > 0.77 Fluctuations of preoperative anxiety.	Questionnaires filled out at various points of patient journey. High proportion of patients with previous surgical experience.
Buonanno, et al. (2017) [18] Translate and validate APAIS in Italian. Italy	110 participants 49.1% female Reliability - Cronbach's Alpha. Validity - construct (factor analysis), concurrent (correlation with STAI-state).	Validity - two factors, correlates well with STAI-state. Reliability - Cronbach's alpha > 0.755 Cut-off point 14. Higher need for information and anxiety score in women.	High proportion with previous surgical experience.
Berth, et al. (2007) [20] Translate and verify psychometric properties in Germany. Germany	68 patients completed valid set of data 69.1% female. Questionnaires: APAIS, HADS, SCL-90-R-9, COSS, KASA, STOA.	Validity - two factors, correlates with other instruments. Reliability - Cronbach's alpha > 0.86 Higher need for information = higher anxiety score.	Small sample size. Large number of questionnaires for participants to complete. Majority had previous surgical experience.

Table 5: Factor analysis.

Paper	Factor analysis	Eigen value
Moerman, et al. 1996 [10]	Anxiety	3.07
	Need for information	1.25
Mohd Fahmi, et al. 2015 [17]	Anxiety	4.1
	Need for information	1
Nishimori, et al. 2002 [14]	Anxiety	2.92
	Need for information	1.30
Buonanno, et al. 2017 [18]	Anxiety	3.41
	Need for information	1.15
Berth, et al. 2007 [20]	Anxiety	> 1
	Need for information	> 1
Maurice-Szamburski, et al. 2013 [12]	Anxiety about anaesthesia	Not determined
	Anxiety about surgery	Not determined
	Need for information	Not determined

tidimensional questionnaire used in France to assess the patient experience during the preoperative period [12]. The questionnaire looks at various themes including information as well as a global satisfaction index. The stated rationale for using EVAN was the desire to use a tool specific to perioperative care and anaesthesia [12]. This study split APAIS into three subscales and compared each to EVAN. These are anxiety about anaesthesia, anxiety about surgery and the need for information. The results show that the anxiety about anaesthesia subscale and the need for information subscale correlates with EVAN, this was expected because EVAN relates to anaesthesia and includes

Table 6: Cronbach's alpha.

Paper	Cronbach's Alpha (C-α)	
	Anxiety	Need for information
Moerman, et al. (1996) [10]	0.86	0.68
Boker, et al. (2002) [19]	0.84	0.77
Mohd Fahmi, et al. (2015) [17]	0.926	0.900
Berth, et al. (2007) [20]	0.92	0.86
Nishimori, et al. (2002) [14]	0.84	0.68
Buonanno, et al. (2017) [18]	0.877	0.755
Maurice-Szamburski, et al. (2013) [12]	Range from 0.76-0.84	

Table 7: Correlation coefficients.

Paper reference	Correlation coefficient	
	Anxiety	Need for information
Moerman, et al. (1996) [10]	0.74	0.16
Buonanno, et al. (2017) [18]	Combined correlation: STAI-state 0.600 + STAI-trait 0.295	
Boker, et al. (2002) [19]	0.63	Total APAIS 0.51
Mohd Fahmi, et al. (2015) [17]	0.588	0.255
Nishimori, et al. (2002) [14]	0.67	Not specified

assessing information.

Berth, et al. [20] compared APAIS to five tools: Hospital anxiety and depression scale (HADS); the short form of the Symptom Checklist SCL-90-R (SCL-9-K); the coping with surgical stress scale (COSS); cognitive-autonomic-somatic anxiety symptoms (KASA) and the state-trait-operation-anxiety questionnaire (STOA). HADS assesses anxiety and depression, SCL-9-K explores psychological complaints, COSS considers coping in the preoperative situation, the KASA looks at varying reactions and STOA assesses the state of anxiety in the surgical context [20]. The results for the anxiety subscale of APAIS were as expected: lower correlations with COSS and the depression items of HADS; higher correlations with KASA, STOA, the anxiety items of HADS and SCL-9-K. Correlations ranged from0.64-0.83. The need for information subscale showed a moderate correlation with the information seeking subscale of COSS (0.55). However, an element of caution needs to be applied as a small sample size (n = 68) and large number of assessment tools to complete may have influenced results.

In addition to STAI, Boker, et al. [19] compared APAIS to the anxiety visual analogue scale (VAS). The anxiety VAS consists of a line, with zero on the left representing no anxiety and 100 on the right indicating extreme anxiety. A correlation above 0.60 was deemed significant [19]. The results showed a correlation of 0.60 for APAIS as a whole, and 0.61 for the anxiety subscales of APAIS, providing further evidence to support the validity of APAIS.

Discussion

The review findings provided evidence that APAIS is a valid and reliable tool across different countries. Findings also showed common themes, one such theme was the influence of gender on the anxiety score, with women having high anxiety scores in five studies (Table 4). Within these studies it appeared that the results may have been skewed by a disproportionate number of women participant. However, the consistency of this finding and the support from other sources [21], provides evidence to conclude that women are either more likely to experience or report higher levels of preoperative anxiety. This information is useful in providing healthcare professionals with an indicator of patient groups that may experience higher levels of preoperative anxiety that may require intervention. Yet, it is important to remember that assumptions should not be made as preoperative anxiety is subjective to the individual and in other studies women have been shown to not experience more anxiety than men [19-21]. This suggests the value of implementing APAIS to ensure that assessment and management of preoperative anxiety is tailored to the individual's needs, free from assumptions.

A high need for information is accompanied with a high anxiety score [10,14,17,20]. This would support the theory of Miller and Mangan [8] regarding monitors who need information to alleviate their anxiety. This also confirms the evidence by Chan, et al. [9] that the provision of information helps to reduce the fear of the unknown, which in turn reduces preoperative anxiety. However, that this does not mean a high anxiety score correlates with a high need for information and information provision does not simply mean giving all the information available to the patient, but rather finding out what the patient would like to know and how much they would like to know [9]. The need for information score on APAIS, may help aid this provision of information, as APAIS determines whether the individual wants to know as much as possible, or as little as possible.

The results could be used as a guide to help individualise the provision of information and would determine whether this is the best approach to reduce anxiety.

The cut-off scores determined in APAIS are useful in identifying anxious patients from non-anxious patients [10]. The score was chosen by comparing the specificity and sensitivity for each score. Specificity relates to an instrument's ability to measure true negatives and sensitivity shows the ability to identify true positives [15]. There is a negative correlation between specificity and sensitivity, therefore a reasonable compromise needs to be made. The cut-off scores determined in the papers were 11 [10,17], 12 [20] and 14 [18]. If the APAIS was to be implemented in the UK, an appropriate cut-off score would need to be determined due to APAIS potentially responding differently in different countries [18].

The cut-off score acts as a guide to identify anxious patients who may need extra support [10]. Research around interventions to reduce anxiety has been undertaken and psychoeducational and psychosocial interventions have strong evidence to support their effectiveness [22]. Psychoeducational interventions include verbal discussion and formal educational sessions, whereas psychosocial interventions include support groups and counselling [22]. These interventions, tailored towards surgery, can be employed within the surgical setting. High need for information scores on APAIS may indicate psychoeducational interventions for anxious patients who have a 'monitor' approach to information [8]. Whereas psychosocial interventions may be more beneficial in reducing anxiety in patients who have a 'blunter' coping style, especially during any waiting period [8]. If APAIS is used in this way, patients can be better prepared psychologically for their surgery.

In addition to this, the issue of time to address anxiety is a problem and APAIS has been shown to be a very quick assessment tool that takes between 1-2 minutes to complete [12,19,20]. Completing APAIS as a routine part of the preoperative checklist, would provide healthcare professionals with an indication of how anxious the patient is and whether they would like to discuss more about the anaesthetic or surgical procedure.

There are two main limitations to this literature review. Firstly, APAIS was designed because there were no short, self-reporting questionnaires that sought to identify both anxiety and the need for information [10]. Therefore, when it came to comparing APAIS to already validated tools, generic tools centring on anxiety or the preoperative experience were used as the 'gold standard'. Secondly, there are no RCTs that seek to understand how effectively APAIS works in practice, so the results of this review must be viewed with caution.

Conclusion

The evidence indicates that APAIS is a valid and reliable tool that can be used to assess preoperative anxiety and the need for information. It also has the potential to guide the management of preoperative anxiety, which is important considering the high incidence of anxiety at this time and its adverse outcomes. APAIS may therefore serve as a useful tool in facilitating individualised care and appropriate interventions.

References

1. Mitchell M (2011) The future of surgical nursing and enhanced recovery programmes. Br J Nurs 20: 978-984.
2. Shevde K, Panagopoulos G (1991) A survey of 800 patients' knowledge, attitudes and concerns regarding anaesthesia. Anesth Analg 73: 190-198.
3. National Institute for Health and Care Excellence (NICE) (2016) Routine preoperative tests for elective surgery.
4. Badner NH, Nielson WR, Munk S, et al. (1990) Preoperative anxiety: Detection ad contributing factors. Can J Anaesth 37: 444-447.
5. Cashman JN (2001) Fundamentals of anaesthesia and acute medicine: Preoperative assessment. BMJ Books, London.
6. Pritchard MJ (2009) Identifying and assessing anxiety in pre-operative patients. Nurs Stand 23: 35-40.
7. Department of Health (2009) Reference guide to consent for examination or treatment. (2nd edn).
8. Miller SM, Mangan CE (1983) Interacting effects of information and coping style in adapting to gynaecologic stress: Should the doctor tell all? J Pers Soc Psychol 45: 223-236.
9. Chan Z, Kan C, Lee P, et al. (2012) A systematic review of qualitative studies: Patient's experiences of preoperative communication. J Clin Nurs 21: 812-824.
10. Moerman N, van Dam FS, Muller MJ, et al. (1996) The Amsterdam preoperative anxiety and information scale (APAIS). Anesth Analg 82: 445-451.
11. Caldwell K, Henshaw L, Taylor G (2011) Developing a framework for critiquing health research: An early evaluation. Nurse Educ Today 31: e1-e7.
12. Maurice-Szamburski A, Loundou A, Capdevila X, et al. (2013) Validation of the French version of the Amsterdam preoperative anxiety and information scale (APAIS). Health Qual Life Outcomes 10: 166.
13. Tavakol M, Dennick R (2011) Making sense of Cronbach's alpha. Int J Med Educ 2: 53-55.
14. Nishimori M, Moerman N, Fukuhara S, et al. (2002) Translation and validation of the Amsterdam preoperative anxiety and information scale (APAIS) for use in Japan. Qual Life Res 11: 361-364.
15. Polit DF, Beck CT (2010) Essentials of nursing research: Appraising evidence for nursing practice. (7th edn), Lippincott Williams and Wilkins, Philadelphia.
16. Grös DF, Antony MM, Simms LJ, et al. (2007) Psychometric properties of the state-trait inventory for cognitive and somatic anxiety (STICSA): Comparison to the state-trait anxiety inventory (STAI). Psychol Assess 19: 369-381.
17. Mohd Fahmi Z, Lee-Lee L, Pui-San L (2015) Validation of the Malay version of the Amsterdam preoperative anxiety and information scale (APAIS). Med J Malaysia 70: 243-248.
18. Buonanno P, Laiola A, Palumbo C, et al. (2017) Italian validation of the Amsterdam preoperative anxiety and information scale. Minerva Anestesiol 83: 705-711.
19. Boker A, Brownell L, Donen N (2002) The Amsterdam preoperative anxiety and information scale provides a simple and reliable measure of preoperative anxiety. Can J Anaesth 49: 792-798.
20. Berth H, Petrowski K, Balck F (2007) The Amsterdam preoperative anxiety and information scale (APAIS) - The first trial of a German version. Psychosoc Med 4.

21. Masood Z, Haider J, Jawaid M, et al. (2009) Preoperative anxiety in female patients: The issue needs to be addressed. KUST Med J 1: 38-41.

22. Sheldon LK, Swanson S, Dolce A, et al. (2008) Putting evidence into practice: Evidence-based interventions for anxiety. Clin J Oncol Nurs 12: 789-797.

23. Aveyard H, Sharp P (2013) A beginner's guide to evidence-based practice in health and social care. (2nd edn), Antony Rowe, Wiltshire, Chippenham.

DOI: 10.36959/545/368

Copyright: © 2019 Spanner S, et al. This is an open-access article distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.

SCHOLARS.DIRECT