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Reliability and validity of the Acceptance Symptom Assessment Scale in assessing labour pain

Ingrid Bergh, RN, PhD (Senior Lecturer, Associate Professor, Adjunct Assistant Professor)[a,b], Tina Söderlund, RNM, MSc (Clinical Midwife)[c], Linda Vinterskog, RNM, MSc (Clinical Midwife)[c], Lena B. Mårtensson, RNM, PhD (Senior Lecturer, Adjunct Assistant Professor)[a,b,*]

[a] School of Life Sciences, University of Skövde, Box 408, SE-541 28 Skövde, Sweden
[b] University of Rhode Island, USA
[c] Department of Obstetrics and Gynaecology, Skaraborg Hospital, SE-541 85 Skövde, Sweden

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ABSTRACT

Objective: to investigate the reliability and validity of the Acceptance Symptom Assessment Scale (ASAS) in assessing labour pain.
Design: a test–retest approach was used to assess reliability and validity.
Setting: labour ward with approximately 2,400 deliveries annually in western part of Sweden.
Participants: forty-seven pregnant women in the latent or active phase of labour.
Methods: a total of five pain assessments with both the ASAS and the VAS were conducted in three sessions.
Main outcome measures: correlation between ASAS and VAS.
Findings: both scales demonstrated high and significant test–retest correlations ($r=0.83–0.92$; $p<0.001$). High and significant alternative-form reliability correlations ($r=0.76–0.93$, $p<0.001$) were found between ASAS and VAS ratings at all five assessments. Construct validity was established when both the ASAS and the VAS identified a pain reduction ($p<0.001$) 2 hrs after birth, compared to the previous assessment. Over two-thirds of the women preferred the ASAS to the VAS, mainly ($n=30$) because the ASAS provided more choices relating to the pain experience, making it possible to label pain acceptable/unacceptable.
Conclusions: the ASAS is interchangeable with the VAS for assessing labour pain. Over two-thirds of the women preferred it to the VAS.

Introduction

Labour pain is not life-threatening during normal conditions; on the contrary, it is life-giving and includes components that differ completely from pain in general. It is an acute pain that is neither dangerous nor threatening during a normal delivery; rather, it provides information on a normal process. Labour pain can be defined as follows: 'The experience of labour pain is a complex, subjective, multidimensional response to sensory stimuli generated during parturition' (Lowe, 1996, 2002). Labour pain is unique as it is perceived as necessary and it can be more easily accepted than other types of pain (Lowe, 2002). Nonetheless, many women experience their labour pain as worse than expected (Shapiro et al., 1998; Gibbins and Thomson, 2001). Women in labour rate their pain as more severe than those with cancer pain, phantom pain, toothache or back pain. Only patients that have undergone acute limb amputation report higher pain intensity than women in labour (Melzack, 1984). Labour pain can be assessed verbally (Lowe, 2002; Capogna et al., 2010) or non-verbally (Baker et al., 2001; Capogna et al., 2010). The Visual Analogue Scale (VAS) is a rating scale routinely used in health care to evaluate the patient's experience of pain (Jensen and Karoly, 2001). A VAS usually consists of a horizontal or vertical, 100-mm long, ungraded line; the endpoints are assigned suitable words representing the extremes of the phenomenon being assessed (e.g. 'No pain' and 'Worst imaginable pain') (Wewers and Lowe, 1990). The patient marks a point corresponding to the perceived pain (Melzack and Katz, 1992). The pain experience is a multidimensional phenomenon, and the VAS has been criticised for merely assessing pain intensity (Wewers and Lowe, 1990). Nevertheless, it correlates highly with more multidimensional pain rating scales

* Corresponding author at: School of Life Sciences, University of Skövde, Box 408, SE-541 28 Skövde, Sweden.
E-mail addresses: Ingrid.bergh@his.se (I. Bergh), soderlundtina@hotmail.com (T. Söderlund), lindavinterskog@hotmail.com (L. Vinterskog), Lena.martensson@his.se (L.B. Mårtensson).

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when used by women in labour (SF-MPQ, $r=0.61$–$r=0.83$ (Melzack, 1987; Capogna et al., 2010) and POM-WDS, $r=0.85$) (Gaston-Johansson, 1996). Several studies have also shown that the VAS can be used to evaluate treatment of labour pain (Gaston-Johansson, 1996; Mårtensson et al., 2008; Peng et al., 2010) and it is considered to be the gold standard, in research as well as in clinical practice (Jensen et al., 1986; Yarnitsky et al., 1996; Myles and Urquhart, 2005). Ludington and Dexter (Ludington and Dexter, 1998) point out that women's interpretations of 'worst imaginable pain', change over time during childbirth. A woman can rate her pain as 'worst imaginable' at an early stage during childbirth but she may experience even stronger pain later (Ludington and Dexter, 1998). Moreover, the term 'worst imaginable pain' has been discussed in relation to concrete physical and deeper emotional and existential experiences (Bergh et al., 2008). How people relate to 'worst imaginable pain' varies between individuals and situations (Wewers and Lowe, 1990). Despite the severity of labour pain (Shapiro et al., 1998; Melzack and Katz, 1999; Gibbins and Thomson, 2001) it is more easily accepted than other types of pain by many women (Lowe, 2002). However, the VAS does not provide the possibility to label pain as acceptable or unacceptable, even when it is perceived as severe. It is therefore interesting to evaluate other types of pain rating scales for this specific clinical situation. The Acceptance Symptom Assessment Scale (ASAS) is a recently developed instrument for assessing the perceived intensity of symptoms (e.g. pain) (Eckerdal, 2009) (Fig. 1). Like the VAS, the ASAS is a horizontal, 100-mm long line. It combines evaluating terms with a colour gradient, indicating a change in the assessed symptom.

The aim of this study is to investigate the reliability and validity of the ASAS in assessing labour pain.

Methods

Participants and environment

The study was conducted at a maternity ward with approximately 2,400 deliveries per year in a medium-sized general hospital in southern Sweden. Fifty-one pregnant women in gestational weeks 37–41, with singleton pregnancies, in the latent or active phase of labour and with the ability to understand information and instructions, were asked to participate. Of these, four declined participation due to severe pain or to the study seeming difficult. A total of 47 women participated in the study. The women's ages ranged from 18 to 40 years (mean age=29 years, SD=5.4 years). Data were collected between May and October 2010. The study was conducted in accordance with the Declaration of Helsinki and approved by the Regional Ethical Review Board, the University of Gothenburg (Dnr: 163:10).

Data collection

On arrival at the delivery ward, the women received verbal and written information about the study. After giving written informed consent, they received instructions on how to use the two rating scales, i.e. the VAS and ASAS. A total of five assessments during three sessions were conducted. The scales were presented one by one, in random order. The woman was asked to evaluate her pain between two contractions in response to the question 'How much pain were you in during the last contraction?'. Immediately before pain assessment began, the midwife recorded the gestational age, the interval and duration of the contractions and the cervical dilatation and effacement in the study protocol. The woman assessed her pain on both scales twice, before and after a contraction, respectively (assessments 1 and 2). This procedure was repeated after 1 hr (assessments 3 and 4). At all assessments, the woman was also asked to specify where the pain was most pronounced. Finally, she was asked to assess her pain on the two scales a third time 2 hrs after birth in response to the question 'How much pain are you in right now?' (assessment 5). At this time, the woman was also asked which of the scales was the easiest to use and given the opportunity to motivate her answer.

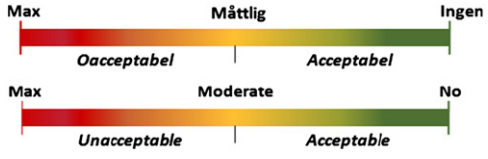

Fig. 1. The Acceptance Symptom Assessment Scale (ASAS), Swedish version and English translated version.

Instruments

Since the VAS is considered to be the gold standard in pain assessment, both in research and clinical practice (Jensen et al., 1986; Yarnitsky et al., 1996; Myles and Urquhart, 2005), it was used as the reference to assess the women's experience of pain. The VAS used in this study was a 100-mm horizontal ungraded line with endpoints marked 'No pain' and 'Worst imaginable pain'.

The ASAS (Fig. 1) was developed by Professor Carl-Johan Fürst, Director of the Palliative Medicine Section at the Stockholm Nursing Home, and Gunnar Eckerdal, Chief Physician at the Palliative Team in Kungsbacka, Sweden, in cooperation with Mundipharma AB, Göteborg, Sweden. The instrument is a major subject in the 'Patient Book: Pain Relief—how it works' (Eckerdal, 2009). The two ends denote the extremes, i.e. 'Max' on the left and 'No' on the right. 'Moderate' is also marked in the middle. Furthermore, the scale is coloured, shifting gradually from intense red on the left side to intense green on the right side. The red part of the scale is marked 'Unacceptable' and the green part is marked 'Acceptable'. The appropriate point on the scale is selected with a vertical bar.

Statistical analysis

To quantify the VAS assessments, the distance was measured in mm between the 'No pain' endpoint and the point selected by the parturient (Carlsson, 1983; Choiniere et al., 1990; Tesler et al., 1991; Choiniere and Amsel, 1996; Price et al., 1999). Similarly, the ASAS assessments were quantified by measuring the distance in mm between 'No' and the point selected by the parturient. Opinions diverge about the character of the data obtained with the VAS (probably also ASAS) (Carlsson, 1983; Price et al., 1983; Heft and Parker, 1984; Chapman et al., 1985; Tesler et al., 1991). However, most authors agree that the variable does not have a normal distribution. Accordingly, non-parametric statistical tests were used in the present study.

Reliability and validity

Test–retest reliability indicates the degree of stability over time, answering the question: 'Does assessment at different times yield the same response' (Neuman, 1997)? To test this, the same test is given on two or more occasions to the same individuals (Melzack and Katz, 1992). To evaluate the test–retest reliability of the ASAS and the VAS, the agreement between assessments 1 and 2, as well as between assessments 3 and 4, was calculated with Spearman's correlation coefficient (Polit and Hungler, 1999). The interval