BRAZILIAN VERSION OF THE TORONTO PAIN MANAGEMENT INVENTORY - ACUTE CORONARY SYNDROME

VERSÃO BRASILEIRA DO TORONTO PAIN MANAGEMENT INVENTORY – ACUTE CORONARY SYNDROME

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ABSTRACT

Objective: to perform the cross-cultural adaptation of the Toronto Pain Management Inventory - Acute Coronary Syndrome instrument into Brazilian Portuguese and test face validity evidence of the adapted instrument. Methods: we followed the procedures proposed by the Guideline for Establishing Cultural Equivalency of Instruments (RDC/TMD) Consortium Network (phase 1) for cross-cultural adaptation. To measure agreement between the judges in the equivalences analysis, we used the content validity index (CVI). Face validity was performed with nurses during the pre-test and consisted of assessing the ease of understanding when answering the items. Results: the adapted instrument achieved linguistic equivalence. The semantic, idiomatic, experimental and conceptual equivalences had a mean CVI of 98.5 (95% CI 97.1-100.0), 97.8 (95% CI 96.0-99.5), 94.1 (95% CI 91.6-96.6) and 99.6 (95% CI 98.9-100.0). In the pre-test, 92.5% of nurses considered the instrument easy to understand and 85% found no difficulty. Conclusion: the adapted instrument is culturally equivalent to the original instrument and shows evidence of face validity. The psychometric properties of the instrument are yet to be investigated.

Keywords: Knowledge; Chest Pain; Nursing; Validation Study; Acute Coronary Syndrome.

RESUMO

Objetivo: realizar a adaptação transcultural do instrumento Toronto Pain Management Inventory – Acute Coronary Syndrome para o Português brasileiro e analisar evidências de validade de face do instrumento adaptado. Métodos: para a adaptação transcultural foram seguidos os procedimentos propostos pelo Guideline for Establishing Cultural Equivalency of Instruments (RDC/TMD) Consortium Network (fase 1). Para verificar a concordância entre os juízes na análise das equivalências foi utilizado o índice de validade de conteúdo (IVC). A validade de face foi feita com enfermeiros durante o pré-teste e consistiu na avaliação da facilidade de compreensão para responder aos itens. Resultados: o instrumento adaptado alcançou equivalência linguística. As equivalências semântica, idiomática, experimental e conceitual tiveram IVC médios de 98.5 (IC 95% 97.1-100.0), 97.8 (IC 95% 96.0-99.5), 94.1 (IC95% 91.6-96.6) e 99.6 (IC 95% 98.9-100.0). No pré-teste, 92.5% dos enfermeiros consideraram o instrumento de fácil compreensão e 85% não encontraram dificuldade. Conclusão: o instrumento adaptado é culturalmente equivalente ao instrumento original e reúne evidências de validade de face. As propriedades psicométricas do instrumento ainda serão investigadas.

Palavras-chave: Conhecimento; Dor no Peito; Enfermagem; Estudos de Validação; Síndrome Coronariana Aguda.

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RESUMEN

Objetivo: realizar la adaptación transcultural del instrumento Toronto Pain Management Inventory - Acute Coronary Syndrome al idioma portugués de Brasil y analizar la evidencia de la validez aparente del instrumento adaptado. Métodos: para la adaptación transcultural se siguieron los procedimientos propuestos por la Guideline for Establishing Cultural Equivalency of Instruments (RDC/TMD) Consortium Network (fase 1). Para verificar el acuerdo entre los jueces en el análisis de equivalencias se utilizó el índice de validez de contenido (IVC). La validez aparente se realizó con los enfermeros durante la prueba previa y consistió en evaluar la facilidad de comprensión para responder a los ítems. Resultados: el instrumento adaptado logró equivalencia lingüística. Las equivalencias semánticas, idiomáticas, experimentales y conceptuales tuvieron un IVC promedio de 98.5 (IC 95% 97.1-100.0), 97.8 (IC 95% 96.0-99.5), 94.1 (IC 95% 91.6-96.6) y 99.6 (IC 95% 98.9-100.0). En la prueba previa, el 92.5% de los enfermeros consideraba que el instrumento era fácil de entender y el 85% no encontró dificultades. Conclusión: el instrumento adaptado es culturalmente equivalente al instrumento original y reúne evidencia de validez aparente. Las propiedades psicométricas del instrumento aún no se han investigado.

Palabras clave: Conocimiento; Dolor en el Pecho; Enfermería; Estudio de Validación; Síndrome Coronario Agudo.

INTRODUCTION

From 2015 to February 2020, Acute Myocardial Infarction (AMI) was accountable for 581,878 hospitalizations in the Brazilian Unified Health System (Sistema Único de Saúde - SUS), with a progressive increase from 97,328 hospitalizations in 2015 to 129,814 in 2019. In the same period, the disease caused 62,187 deaths, corresponding to the mean mortality rate of 10.56.

Acute Myocardial Infarction and other types of acute coronary syndrome (ACS) are diagnosed through clinical history, electrocardiogram assessment, and markers of myocardial ischemia. The clinical history is an indispensable instrument, including detailed reports on the peculiarities of pain, risk factors, previous AMI and atherosclerotic disease.2,4 Chest pain related to ischemic cardiac events is usually reported as tightness, pressure or pain, anxiety, pharmacological management strategies, including antianginal drugs and opioids. It was named the Toronto Pain Management Inventory-ACS Version (TPMI-ACS)10 and adapted by a nurse with expertise in critical cardiovascular care and researcher in the cardiovascular and pain areas.

The TPMI-ACS is a 24-item instrument scored on 11-point scales ranging from zero to 100. The scale extremities refer to No pain and Worst pain ever; Never and Always; None and All; Not proportional and Proportional; Not associated and Associated; Disagree and Agree; Not competent and Competent; Not adequate and Adequate; Not gold standard and Gold standard.10 Aiming to reduce acquiescence bias and avoid use of negative items, half of the scale items were formulated so that higher scores indicate greater knowledge. However, to generate the final score, the remaining items are reversed: e.g., if the answer was scored 80 points, its reverse score will be 20, and so on.10

The overall score ranges from zero to 2,400; a score from zero to 800 indicates low knowledge; a score from 801 to 1,600 indicates moderate knowledge; and a score from 1,601 to 2,400 indicates most knowledge. The total score is reached through the formula: X/2400x100, where X represents the percentage of knowledge. The instrument was tested in Canada for content validity by eight clinical and academic experts. The content validity indexes (CVI) for each item ranged from 0.5 to 1.0 and the mean total CVI of the instrument was 0.90.10 To the best of the authors’ knowledge, no adaptations have been performed to other countries.

In Brazil, there are no instruments validated to assess nurses’ knowledge and beliefs about ACS pain, providing a standardized measure of the participants’ baseline status and the effectiveness of the educational intervention.
METHOD

This is a methodological study of cross-cultural adaptation of health measurement instruments. The author of the instrument provided authorization to adapt the TPMI-ACS via electronic mail. The adaptation process was carried out according to the Guideline for Establishing Cultural Equivalency of Instruments - RDC/TMD Consortium Network, concerning phase 1, including the following steps:

a) Translation: two independent translations (T1 and T2) were carried out, one by a nurse and the other by a biochemical engineer, both Brazilians, who lived in Canada and knew local expressions and culture;

b) synthesis is and resolution of the discrepancies between the two translations: a nurse with a specialist degree in Cardiology and a Ph.D. in Health Sciences performed the synthesis of the two independent translations (T12);

c) back-translation: the translation synthesis (T12) had two independent back-translations (BT1 and BT2) performed by a North American and an English translator. The North American translator the synthesized the two-independent back-translations (BT12);

d) independent assessment of the back-translation versus original document: BT12 was compared to the original document by the author of the original instrument to reconcile discrepancies between the back-translation and the source of origin;

e) review and iterative development of the discrepancies: in this phase, the problematic translation items identified during the previous phase would be evaluated by the main researcher and could be returned to the translator or back-translator for review. However, there were no problematic items found. The translated material had a Portuguese review assessing for standard norms of the language;

f) consolidation of the translation units: five nurses with clinical and academic expertise in Cardiology and fluency in English, two with a master’s degrees and three with doctoral degrees discussed all translations face-to-face, item by item, until reaching a consolidated version;

g) review by a judge committee regarding cultural equivalence: the material approved in the previous phase, consisting of 54 items, including the instrument title, instructions, questions, answers, and scoring, was e-mailed to four nurses (two with master’s degrees and two with doctoral degrees) and a psychometrist (with a doctoral degree) for equivalence analysis. This group used a scale to number of answers. Coefficients less than 0.2 were considered poor, between 0.2 and 0.4 were considered reasonable, between 0.4 and 0.6 were considered moderate, between 0.6 and 0.8 were considered good and above 0.8 were considered excellent. Values above 0.8 were considered adequate, with a 95% confidence interval. The CVI was calculated for each equivalence assessed and the instrument as a whole;

h) construction of the pre-final version of the instrument: after the adjustments recommended by the experts, the pre-final instrument was elaborated. It was named "pre-final version" because it had not been tested in the area;

i) independent review of the translation and documentation process: the main researcher and a nurse with a specialist degree in Cardiology and a Ph.D. in Health Sciences reviewed the products from all the previous phases to confirm that the discrepancies had been identified, that the alternative forms of adaptation had been considered, that the final decisions had incorporated sufficient perspectives and that the pre-final instrument correctly reflected the translation process. The 10th phase of the first stage, corresponding to the publication of the translated and adapted instrument in the Consortium Network, as a way to allow for other researchers’ collaboration, was not carried out, since it was not the authors’ purpose to publish the instrument in the context of the Consortium. Thus, the next phase was carried out, providing a pre-test and review of the instrument;

j) pre-test and review of the instrument: the instrument was applied to 40 nurses to analyze the face validity evidence. They were graduate nurse students on Intensive Care and Cardiology & Hemodynamics. After reading, understanding, and filling out the Free and Informed Consent Form, the nurses answered to the instrument. Finally, they were asked if the question for each item was easy to understand (dichotomous answer, yes or no) and if the nurse had found any difficulty to answer the item (dichotomous answer, yes or no).

The Research Ethics Committee of Hospital Israelita Albert Einstein approved this study (Protocol no. 12453019.2.0000.0071).

RESULTS

In the translation process, there were no significant discrepancies between the T1 and T2 translations (phase 1) so few adjustments were necessary to produce the T12 synthesis (phase 2).
The T12 was back-translated and the versions BT1 and BT2 (phase 3) reflected the content of the original instrument, according to the author’s opinion (phase 4). Thus, the review of problematic items was not needed and the instrument underwent a Portuguese review (phase 5). In the next phase (6), a group of nurses consolidated the translation units. Of the 24 items in the instrument, 21 underwent some type of adjustment for the preparation of the consolidated version (Appendix 1). This consolidated version was submitted to the analysis of a panel of judges for equivalences (phase 7).

In this phase, the entire instrument, including the title, instructions, questions, answers, and scoring, was evaluated by the panel of judges, totaling 54 topics (Table 1). The CVI for the instrument as a whole ranged between 85 and 100, with an average of 97.5 (95% CI: 96.5-98.5).

The pre-final instrument (phase 8) was named Toronto Pain Management Inventory - Acute Coronary Syndrome – Versão Brasileira (Appendix 2).

In the pre-test evaluating the face validity evidence, the nurses’ scores ranged between 940 and 1,780 points, with a mean of 1,272.7±183.0 points; 29 (96.7%) professionals had moderate knowledge (801 to 1,600 points) and one (3.3%) had a most knowledge on the subject (1,601 to 2,400 points).

Table 2 shows the median score for each item obtained by the nurses. The respondents showed a high level of knowledge through items 1 (referring to the what pain rating ACS patients should experience after treatment), 18 (referring to the need to reduce the morphine dose to improve nausea), 21 (frequency of use of a numeric rating scale to assess chest pain intensity) and 24 (self-reported pain intensity as the gold standard to guide pain management).

Table 2 - Score obtained by graduate nurses when answering the Toronto Pain Management Inventory – Acute coronary Syndrome – Versão Brasileira (n=40). São Paulo - SP, Brazil, 2016

| Items   | Median | Interquartile range (Q1; Q3) |
|---------|--------|-----------------------------|
| 1*      | 0      | 0; 10                       |
| 2*      | 55     | 40; 70                      |
| 3*      | 65     | 50; 90                      |
| 4*      | 55     | 50; 70                      |
| 5*      | 80     | 40; 90                      |
| 6*      | 75     | 50; 90                      |
| 7*      | 60     | 40; 80                      |
| 8*      | 70     | 40; 80                      |
| 9*      | 70     | 50; 90                      |
| 10*     | 70     | 50; 80                      |
| 11*     | 70     | 50; 80                      |
| 12*     | 60     | 40; 80                      |
| 13*     | 60     | 40; 80                      |
| 14*     | 50     | 40; 50                      |
| 15*     | 50     | 30; 70                      |
| 16*     | 50     | 30; 60                      |
| 17*     | 50     | 20; 70                      |
| 18*     | 40     | 10; 50                      |
| 19*     | 75     | 50; 100                     |
| 20*     | 60     | 30; 90                      |
| 21*     | 100    | 80; 100                     |
| 22*     | 50     | 20; 80                      |
| 23*     | 50     | 20; 70                      |
| 24*     | 80     | 50; 90                      |

* Lower scores indicate less knowledge. # Higher scores indicate more knowledge.

The nurses had a low level of knowledge through items five (referring to how often ACS patients voluntarily report chest pain), six (referring to how often ACS patients voluntarily ask for a analgesic for chest pain) and 19 (regarding consultation with the prescribing physician to obtain an order for a larger maximum dose of morphine if the patient continues to report severe pain).

Among all the nurses, 92.5% (n=37) considered the instrument to be easy to understand and 85% (n=34) found no difficulty in filling it out.

DISCUSSION

Despite existing evidence on the impact of pain, it is still underidentified and undertreated in terms of physiological and psychological changes. Effective pain management requires thorough knowledge, attitudes, and clinical decision-making skills.
Knowledge deficits in this area and inadequacy of pain assessment models can generate negative attitudes that interfere with clinical decision-making skills and add complexity to the pain management issue, leading to incorrect use of relief measures.3,5-18 Thus, improving the knowledge of health professionals is the first step towards obtaining adequate pain assessment and management in patients with cardiac pain events.

In this context, the TPMI-ACS was adapted to the Brazilian culture, generating the Toronto Pain Management Inventory - Acute Coronary Syndrome – Versão Brasileira (TPMI-SCA-Br). Once the instrument’s validity and reliability have been shown, it can be used to assess nurses’ baseline knowledge and beliefs in contexts such as urgency and emergency and critical care, and their evolution after the implementation of educational measures.

The absence of significant discrepancies between the initial translations showed that the terms used in the original instrument did not generate semantic doubts for the translators, even though one of them was not aware of the applied health area.

The independent assessment of the back-translated versions by the author of the original instrument (phase 4) is a methodological step in which the author could have identified possible unusual meanings from errors in the previous phases. In this case, the researchers would have the possibility to resume back-translations or translations, depending on the stage in which the error had been identified, preventing it from persisting until the final stages of adaptation. It is a phase that advances, in terms of methodological rigor, compared to the most commonly used method for cross-cultural adaptation, proposed by Beaton in 2000.19

The qualification of the nurse who synthesized versions T1 and T2 in phase 2 - specialized in Cardiology and with a Ph.D. degree – and the nurses who consolidated the translation units in phase 6 - clinical and academic expertise in Cardiology, fluency in English, with at least a master’s degree - contributed for the Brazilian version to have an academic character, without detriment to the language used in clinical practice. Authors previously highlighted the relevance of selecting experts while valuing clinical practice, in addition to academic knowledge.20

Despite the nurses’ expertise in phase 6 face-to-face meeting, undue influences of psychological factors may have occurred during the deliberations, such as the dominance of opinion (special persuasion of the most authoritative/most senior member), special persuasion of the loudest member, the inability of members to abandon publicly expressed opinions, in addition to the effect of the majority opinion’s popularity.21

Given the possibility of the influence of these psychological factors, the anonymous participation of another judges committee in phase 7 via email was important because anonymity prevents dominant individuals from influencing the group. Thus, the evidence of satisfactory semantic, idiomatic, experimental and conceptual equivalences was not obtained through external pressures.22

The experts’ opinion in phase 7 was reflected on the nurses’ easy understanding in the pre-test (phase 11). This step is important because, at times, what is considered relevant by the target population of an instrument may not have been considered by researchers.23 In addition to the nurses’ understanding of the instrument’s content, it is relevant to consider its performance regarding the scores. Considering that they were nurses at the specialization level, in courses whose practice demands skills directly related to the construct measured by TPMI-ACS, the fact that there is a score of 940 (low knowledge), the predominance of moderate knowledge and only one nurse with most knowledge must be adjusted. Thus, additional use of the instrument can take place in the educational area at the graduate level, subsidizing corrections regarding deficient knowledge and misbeliefs.

Also, the lack of knowledge regarding how often patients with ACS voluntarily report chest pain, how often they voluntarily ask for analgesics for chest pain and consultation with the prescribing physician to obtain an order for a larger maximum dose of morphine if they continue to have severe pain corroborates results of a previous study, which showed inadequate evaluation and reluctance to administer opioids in the treatment of chest pain in an emergency department.24

An incorrect evaluation of pain as less severe than it is, believing that the patient exaggerates, not having adequate knowledge about analgesia, concerns about addiction and beliefs that treatment delays the diagnosis result in inadequate pain management.18 Furthermore, we believe some nurses erroneously support the idea that patients should be encouraged to endure pain as much as possible before resorting to a relief method. Insufficient clinical treatment, knowledge and problematic beliefs about pain are the main barriers to its management, resulting in dissatisfaction with the ineffectiveness of relief strategies.25

We consider that the set of methodological characteristics adopted by this study provides more security regarding the final product, which will be subjected to psychometric assessments.

CONCLUSION

TPMI-SCA-Br is culturally equivalent to the original instrument and has face validity evidence. However, content, criteria and construct validities, in addition to the reliability of the Brazilian version must still be investigated so that the instrument can be used to measure nurses’ knowledge and beliefs about ACS pain, thereby supporting planning of targeted interventions that improve the quality of pain assessment and management.

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Appendix 1 - Questions in the original version, final version, consolidated version, and their respective explanations. São Paulo - SP Brazil, 2016

| Original version | Version based on the translations | Consolidated version in the 6th phase | Explanation |
|------------------|----------------------------------|--------------------------------------|-------------|
| The Toronto Pain Management Inventory ACS – Version (Scoring Template) | Inventário de Manejo da Dor de Toronto - Síndrome coronariana aguda - SCA - Versão (Modelo de pontuação) | Inventário de Manejo da Dor de Toronto - SCA - Versão brasileira (Formulário de pontuação) | The word Modelo was replaced by the term Formulário as being more appropriate. The "versão brasileira" was included after the titleindicating the target country where the scale went through the process of translation and cross-cultural adaptation. |
| This 24 item inventory collects information about your knowledge and beliefs about Acute Coronary Syndrome (ACS). For each item, please circle the number that best describes your understanding of ACS pain and its associated management. | Este inventário de 24 itens coleta informações sobre seu conhecimento e opinião acerca da Síndrome Coronariana Aguda (SCA). Para cada item, por favor, circule o número que melhor descreve seu entendimento sobre a dor relacionada à SCA e seu manejo. | Esse inventário de 24 itens coleta informações sobre seu conhecimento e crença sobre a Síndrome Coronariana Aguda (SCA). Para cada item, por favor, circule o número que melhor descreve seu entendimento sobre a dor relacionada à SCA e seu manejo. | The substitution of "opinião a cerca da", by "crença sobre a" was suggested, considering the real meaning of the words within the context. |
| Item 1 - With effective pain management, what pain rating should ACS patients experience after treatment? | Com o manejo efetivo da dor, qual é a intenstidade da dor que os pacientes com SCA devem suportar / experenciar após o tratamento? | Com o manejo efetivo da dor, qual é o nível de dor que os pacientes com SCA devem sentir após o tratamento? | "Pain level" was considered the most commonly used term in Brazilian nursing practice instead of intensidade. The terms "suportar" and "experenciar" were suggested as not adequate, replaced by "senti". |
| No pain – Worst pain ever | Sem dor – Dor máxima | Nenhuma dor – Dor máxima | The term “nenhuma” was considered more adequate to report the pain level. |
| Item 2 - How often do ACS patients overstate their chest pain (i.e., what % of the time)? | Com qual frequência os pacientes com SCA superestimam sua dor no peito? (por ex: qual a porcentagem do tempo)? | Com qual frequência os pacientes com SCA superestimam sua dor no peito? (i.e: qual % de vezes)? | "É" was considered as "isto é" and not, "for example. It was opted to use "% de vezes" instead of "porcentagem do tempo", believing that the percentage of time was hours measurement, which makes it difficult to answer and to understand the question." |
| Item 3 - To what degree is an opioid analgesic appropriate for severe ACS-related pain? | Em que medida um analgésico opioide é apropriado para dor severa relacionada à SCA? | Quando um analgésico opioide é apropriado para dor intensa relacionada à SCA? | The expression "Em que medida" was replaced by "Quando", since "medida" refers to an action and the effect of measuring; comparing a quantity with its unit or something non-material with something else. The term "severa" was replaced by "intensa", considering the type of answer requested in the question. |
| Item 4 - What percentage of patients that require opioids for pain become addicted? | Qual é o percentual de pacientes que necessitam de opioide para dor e se tornam adictos? | Qual é o percentual de pacientes que necessitam de opioide para dor que se tornam dependentes? | The word "e" was replaced by the word "que", showing continuity of just one question. The term most commonly used is "dependentes" instead of "adictos". |
| Item 9 - Disagree – Agree | Não concordo - Concordo | Discordo – Concordo | The expression "não concordo" was replaced by "discordo", considering the type of answer requested in the question. |
| Item 10 - What pain rating should ACS patients have before the next opioid analgesic dose is given? | Qual a classificação de dor que os pacientes com SCA devem reportar antes de ser administrada a próxima dose de analgésico opioide? | Qual o nível de dor que os pacientes com SCA devem ter antes de ser administrada a próxima dose de analgésico opioide? | The word "classificação" was replaced by "nível", considering the real meaning of the question and the usual form used in clinical nursing practice. The word "reportar" was replaced by "ter", approximating to the terms used in Brazilian nursing practice." |
| Item 11 - What percentage of the time would you administer an opioid analgesic for ACS pain? | Qual a percentagem do tempo em que você administraria um analgésico opioide para dor de SCA? | Com qual frequência você administraria um analgésico opioide para dor de SCA? | The expression "Com qual frequência" was used instead of "Qual a percentagem do tempo em que", believing that the percentage of time referred to measurement in hours and not in times, which makes it difficult to answer and understand the question. *** |

Continua...
Item 12 - What pain rating should ACS patients have before increasing the dose of intravenous nitroglycerine?

Item 13 - How often would you give ACS patients an analgesic for chest pain if their BP and HR were within normal limits?

Item 14 - When beginning thrombolytic therapy, what percentage of the time would you hold opioid analgesics to determine if effective reperfusion ST changes have occurred?

Item 15 - How often would you give ACS patients an analgesic for chest pain if their BP and HR were within normal limits?

Item 16 - When beginning thrombolytic therapy, what percentage of the time would you hold opioid analgesics to determine if effective reperfusion ST changes have occurred?

Item 17 - A 45 year old male patient had an anterior wall MI one month ago. Today he presents to the ED with a report of moderate chest pain, scoring 5/10 on the pain intensity scale. While you are attaching the bedside monitor, you notice that his two lead ECG has no ST- T segment changes. Would you give him the morphine dose? Would you follow this advice?

Item 18 - Mrs. A, is a 67 year old patient admitted with an inferior wall MI. She has received an antiemetic for nausea but has considerable pain. Your colleagues recommend reducing her IV Morphine dose. Would you follow this advice?

Item 19 - Mr. S. continues to have severe pain despite receiving the maximum morphine dose ordered. Would you consult with the ordering physician about obtaining an order for a larger dose maximum dose?

Item 20 - What percentage of the time do younger patients with ACS experience more pain as compared to older ACS patients?

Item 21 - How competent do you feel in effectively managing ACS patients having ongoing pain?

Item 22 - How competent do you feel in effectively managing ACS patients having ongoing pain?
Theword “nota” meaning toobserve something, was replaced by “pontuação” meaning a scoring effect, related to the interpretation of results.

Brazilian version of the Toronto Pain Management Inventory – Acute Coronary Syndrome

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Continuação...

**Item 24** - To what degree are patients’ self-reports of pain intensity the gold standard guiding pain management?

**Scoring Template: Toronto Pain Management Inventory-Acute Coronary Syndrome Version (TPMI-ACS).** The TPMI-ACS is a 24 item scale that measures nurses’ knowledge of ACS pain and cardiac pain assessment, anatomy, pharmacologic management strategies, including anti-anginal medications and opioids. In order to decrease acquiescence bias and avoid use of negative items, half of the scale items are phrased so that higher scores indicate greater knowledge (Streiner, Norman, 2008). To the final score, the remaining items (i.e., 1, 2, 4, 7, 9, 10, 12, 14, 16, 18, 20) were reversed (i.e., subtracted from 100) and all items were summed. The overall summary range is 0 to 2400; higher scores indicate knowledge.

**Modelo de Pontuação: Inventário de Manejo da Dor de Toronto – Versão Síndrome Coronariana Aguda (IMDT - SCA).** O TPMI-ACS é um questionário de 24 itens que mede o conhecimento de enfermeiros sobre a dor na SCA, além da avaliação da dor cardíaca, ansiedade, estratégias no manejo farmacológico, incluindo medicamentos antianginosos e opioides. A fim de diminuir o viés consentido e evitar o uso de itens negativos, metade dos itens da escala são formulados de tal forma que as “pontuações mais elevadas indicam maior conhecimento (STREINER; NORMAN, 2008). Para gerar a pontuação final, os itens restantes (ex.: 1, 2, 4, 7, 9, 10, 12, 14, 16, 18, 20) foram revertidos (ex.: subtraídos de 100) e todos os itens foram somados. O intervalo da pontuação total é de 0 a 2400; pontuações mais altas indicam um conhecimento superior.”

**Formulário de Pontuação: Inventário de Manejo da Dor de Toronto – Versão Síndrome Coronariana Aguda (IMDT - SCA - BR).** O TPMI-SCA é um inventário de 24 itens que mede o conhecimento de enfermeiros sobre a dor na SCA, além da avaliação da dor cardíaca, ansiedade, estratégias no manejo farmacológico, incluindo medicamentos antianginosos e opioides. A fim de diminuir o viés de aquiescência e evitar o uso de itens negativos, metade dos itens da escala são formulados de tal forma que as pontuações mais elevadas indicam maior conhecimento (STREINER; NORMAN, 2008). Para obter a pontuação final, os itens restantes (i.e.: 1, 2, 4, 7, 9, 10, 12, 14, 16, 18, 20) foram revertidos (ex.: subtraídos de 100) e, posteriormente, todos os itens foram somados. A pontuação total varia de 0 a 2400, em que pontuações mais altas indicam um conhecimento superior.”

| NAME / LABEL | VALUE / MEASURE / COMMENTS |
|--------------|----------------------------|
| Knowledge Level / TPMI-Total Score KNOWLEDGE CATEGORY | 0= low knowledge 0-800 1= moderate knowledge 801-1600 2= most knowledge 1601-2400 |
| 0.800-1.600 = low knowledge 1.601-2400 |
| Nível de Conhecimento / IMDT-Pontuação Total Categoria de Conhecimento 0= baixo conhecimento 0-800 1= conhecimento moderado 801-1600 2= muito conhecimento 1601-2400 |
| 0.800-1.600 = baixo conhecimento 1.601-2400 |

It was necessary to replace the word “Modelo” by the term “Formulário”, for allowing the formalization of information. The acronym “BR” was included to indicate the Brazilian version. The word “questionário” was replaced by “inventário”, making a judgment/evaluation about something. The “consentido” was replaced by “aquiescência”, in the sense of agreement. The word “gerar” was replaced by “obter”, to indicate possession, to achieve some result. It was considered necessary to reformulate the expression “A pontuação total varia de” instead of “O intervalo da pontuação total é de” for showing discrepancy when compared to the original version.

| NAME / RÓTULO / VALOR / MEDIDA / COMENTÁRIOS |
|---------------------------------------------|
| Pontuação Reversa (p. ex. Se pontuado 80, então, a notação reversa será 20) A resposta correta é dor zero = 100. |
| Pontuação Reversa (p. ex. Se pontuado 80, então, a pontuação reversa será 20) A resposta correta é dor zero = 100. |

The word RÓTULO was replaced by DESCRIÇÃO, as a term more commonly used to explain the content to be assessed. The word “nota” meaning to observe something, was replaced by “pontuação” meaning a scoring effect, related to the interpretation of results.

The word “nota” meaning to observe something, was replaced by “pontuação” meaning a scoring effect, related to the interpretation of results.
Este inventário de 24 itens coleta informações sobre o seu conhecimento e crença sobre a Síndrome Coronariana Aguda (SCA). Para cada item, por favor, circule o número que melhor descreve seu entendimento sobre a dor relacionada à Síndrome Coronariana Aguda e seu manejo.

1. Com o manejo efetivo da dor, qual é o nível de dor que os pacientes com Síndrome Coronariana Aguda devem sentir após o tratamento?

0 10 20 30 40 50 60 70 80 90 100
Nenhuma Dor  Dor máxima

2. Com qual frequência os pacientes com Síndrome Coronariana Aguda superestimam sua dor no peito? (isto é: qual % de vezes?)

0 10 20 30 40 50 60 70 80 90 100
Nunca  Sempre

3. Quando um analgésico opióide é apropriado para dor intensa relacionada à Síndrome Coronariana Aguda?

0 10 20 30 40 50 60 70 80 90 100
Nunca  Sempre

4. Qual é o percentual de pacientes que necessitam de opióide para dor que se tornam dependentes?

0 10 20 30 40 50 60 70 80 90 100
Nenhum  Todos

5. Após a sua avaliação inicial, com qual frequência os pacientes com Síndrome Coronariana Aguda relatam, voluntariamente, quando eles estão tendo dor no peito? (isto é: qual % de vezes?)

0 10 20 30 40 50 60 70 80 90 100
Nunca  Sempre

6. Com qual frequência os pacientes com SCA solicitam, voluntariamente, analgésicos para dor no peito? (isto é: qual % de vezes?)

0 10 20 30 40 50 60 70 80 90 100
Nunca  Sempre

7. Em que medida a dor no peito é proporcional ao tamanho e profundidade da região isquêmica miocárdica?

0 10 20 30 40 50 60 70 80 90 100
Não proporcional  Proporcional

8. Em que medida a dor no peito está associada à ansiedade em pacientes com Síndrome Coronariana Aguda?

0 10 20 30 40 50 60 70 80 90 100
Não associada  Associada

9. Até que ponto você concorda que a Morfina IV tem uma dose máxima acima da qual não é obtido maior alívio de dor?

0 10 20 30 40 50 60 70 80 90 100
 Discordo  Concordo

10. Qual o nível de dor que os pacientes com Síndrome Coronariana Aguda devem ter antes de ser administrada a próxima dose de analgésico opióide?

0 10 20 30 40 50 60 70 80 90 100
Nenhuma Dor  Dor máxima
11. Com qual frequência você administraria um analgésico opióide para dor de Síndrome Coronariana Aguda?

|         | 0  | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 100 |
|---------|----|----|----|----|----|----|----|----|----|----|-----|
| Nunca   |    |    |    |    |    |    |    |    |    |    |     |
| Sempre  |    |    |    |    |    |    |    |    |    |    |     |

12. Qual o nível de dor que os pacientes com Síndrome Coronariana Aguda devem ter antes de aumentar a dose de Nitroglicerina intravenosa?

|         | 0  | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 100 |
|---------|----|----|----|----|----|----|----|----|----|----|-----|
| Nenhuma Dolor |    |    |    |    |    |    |    |    |    |    |     |
| Dor máxima      |    |    |    |    |    |    |    |    |    |    |     |

13. Com qual frequência você administraria Nitroglicerina IV para tratar a dor no peito na Síndrome Coronariana Aguda?

|         | 0  | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 100 |
|---------|----|----|----|----|----|----|----|----|----|----|-----|
| Nunca   |    |    |    |    |    |    |    |    |    |    |     |
| Sempre  |    |    |    |    |    |    |    |    |    |    |     |

14. Com qual frequência você diz aos pacientes que eles precisam esperar antes da próxima dose de analgésico para dor no peito (isto é: qual % de vezes)?

|         | 0  | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 100 |
|---------|----|----|----|----|----|----|----|----|----|----|-----|
| Nunca   |    |    |    |    |    |    |    |    |    |    |     |
| Sempre  |    |    |    |    |    |    |    |    |    |    |     |

15. Com qual frequência você administraria aos pacientes com Síndrome Coronariana Aguda analgésicos para dor no peito, se a PA e a FC estiverem dentro dos limites normais?

|         | 0  | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 100 |
|---------|----|----|----|----|----|----|----|----|----|----|-----|
| Nunca   |    |    |    |    |    |    |    |    |    |    |     |
| Sempre  |    |    |    |    |    |    |    |    |    |    |     |

16. Ao iniciar a terapia trombolítica, em quantos por cento das vezes você esperaria para administrar analgésicos opioides para determinar se alterações efetivas de reperfusão no segmento ST ocorreram?

|         | 0  | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 100 |
|---------|----|----|----|----|----|----|----|----|----|----|-----|
| Nunca   |    |    |    |    |    |    |    |    |    |    |     |
| Sempre  |    |    |    |    |    |    |    |    |    |    |     |

17. Um homem de 45 anos teve IAM da parede anterior há um mês. Hoje ele chega ao pronto atendimento com um relato de dor no peito moderada, nota 5/10 na escala de intensidade de dor. Enquanto você instala a monitorização, à beira-leito, observa que não há mudanças de segmento ST e T no ECG de duas derivações. Você administraria Morfina conforme pedido: 2.5-5 mg IV a cada 5 minutos até o máximo de 10 mg/hora se necessário?

|         | 0  | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 100 |
|---------|----|----|----|----|----|----|----|----|----|----|-----|
| Nunca   |    |    |    |    |    |    |    |    |    |    |     |
| Sempre  |    |    |    |    |    |    |    |    |    |    |     |

18. Sra. A., é uma paciente de 67 anos de idade, admitida com IAM da parede inferior. Ela recebeu um antiemético para náuseas, mas está com dor considerável. Seus colegas recomendam reduzir sua dose de Morfina IV. Você seguiria este conselho?

|         | 0  | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 100 |
|---------|----|----|----|----|----|----|----|----|----|----|-----|
| Nunca   |    |    |    |    |    |    |    |    |    |    |     |
| Sempre  |    |    |    |    |    |    |    |    |    |    |     |

19. Sr. S. continua apresentando dor intensa, mesmo recebendo a máxima dose de Morfina prescrita. Você consultaria o médico prescritor para obter autorização para aumentar a dose máxima?

|         | 0  | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 100 |
|---------|----|----|----|----|----|----|----|----|----|----|-----|
| Nunca   |    |    |    |    |    |    |    |    |    |    |     |
| Sempre  |    |    |    |    |    |    |    |    |    |    |     |

20. Com qual frequência os pacientes mais jovens com Síndrome Coronariana Aguda apresentam mais dor quando comparados aos pacientes mais velhos com Síndrome Coronariana?

|         | 0  | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 100 |
|---------|----|----|----|----|----|----|----|----|----|----|-----|
| Nunca   |    |    |    |    |    |    |    |    |    |    |     |
| Sempre  |    |    |    |    |    |    |    |    |    |    |     |
21. Com qual frequência você utiliza uma escala de classificação numérica para avaliar a intensidade da dor no peito (por exemplo: 0-10)?

|       | 0 | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 100 |
|-------|---|----|----|----|----|----|----|----|----|----|-----|
| Nunca |   |    |    |    |    |    |    |    |    |    |     |
| Sempre|   |    |    |    |    |    |    |    |    |    |     |

22. Quão competente você se sente em manejar efetivamente o paciente com dor vigente na Síndrome Coronariana Aguda?

|       | 0 | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 100 |
|-------|---|----|----|----|----|----|----|----|----|----|-----|
| Não competente | |    |    |    |    |    |    |    |    |    |     |
| Competente     |   |    |    |    |    |    |    |    |    |    |     |

23. Quão adequado você sente que é o seu conhecimento atual sobre a avaliação e manejo da dor na Síndrome Coronariana Aguda?

|       | 0 | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 100 |
|-------|---|----|----|----|----|----|----|----|----|----|-----|
| Não Adequado | |    |    |    |    |    |    |    |    |    |     |
| Adequado |

24. Até que ponto o auto relato de intensidade da dor dos pacientes é considerado padrão ouro para nortear o manejo da dor?

|       | 0 | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 100 |
|-------|---|----|----|----|----|----|----|----|----|----|-----|
| Não é padrão ouro | |    |    |    |    |    |    |    |    |    |     |
| Padrão ouro |

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