

Patients with myocardial infarction history and nurse's perspective in a medication adherence intervention adequacy

Perspectivas de pacientes com história de infarto do miocárdio e do enfermeiro na adequação de uma intervenção para adesão medicamentosa

Perspectivas de pacientes con antecedentes de infarto de miocardio y enfermeros sobre la adecuación de una intervención para la adherencia a la medicación

Received: 06/08/2022 | Reviewed: 06/16/2022 | Accept: 06/20/2022 | Published: 07/02/2022

Rafaela Batista dos Santos Pedrosa

ORCID: <https://orcid.org/0000-0003-2918-9778>

University of Campinas, Brazil

E-mail: rpedrosa@unicamp.br

Maria Cecília Bueno Jayme Gallani

ORCID: <https://orcid.org/0000-0002-3418-9134>

Laval University, Canada

E-mail: Maria-cecilia.Gallani@fsi.ulaval.ca

Andressa Teoli Nunciaroni

ORCID: <https://orcid.org/0000-0001-6469-592X>

Federal University of the State of Rio de Janeiro, Brazil

E-mail: andressa.nunciaroni@unirio.br

Mariana Dolce Marques

ORCID: <https://orcid.org/0000-0003-4511-1540>

University of Campinas, Brazil

E-mail: mariana.dmarques@gmail.com

Karyne Duval

ORCID: <https://orcid.org/0000-0001-6110-9665>

Laval University, Canada

E-mail: karyne.duval.1@ulaval.ca

Nathalia Malaman Galhardi

ORCID: <http://orcid.org/0000-0002-2064-4036>

University of Campinas, Brazil

E-mail: nathaliamalaman@gmail.com

Roberta Cunha Matheus Rodrigues

ORCID: <https://orcid.org/0000-0002-0881-0337>

University of Campinas, Brazil

E-mail: rroberta@unicamp.br

Abstract

This study identified the conditions increasing the feasibility, acceptability, and effectiveness potential of an intervention to promote the medication adherence. This was a qualitative, cross-sectional study design and a focus group technique with 15 patients and 14 nurses were used to identify the opinion about the intervention to adhere cardioprotective medications in primary healthcare service. The sessions were recorded in audio, transcribed in full, and discussed in detail to obtain agreement among the evaluators. EQUATOR checklist COREQ is used. The participants suggest that the intervention should be applied in a written and verbal way lasting approximately 30 minutes and reinforcement with a thirty-day interval. The forgetting, complexity of the therapeutic regimen, lack of free access to medications, limited understanding of their disease, and the patient's personal choice of not adhering, have been mentioned as barriers to adherence. Participants adjusted the mode of application and dose of the intervention.

Keywords: Nursing; Medication adherence; Health behavior; Intention.

Resumo

Este estudo identificou as condições que aumentam a viabilidade, aceitabilidade e potencial de eficácia de uma intervenção para promover a adesão medicamentosa. Trata-se de um estudo qualitativo, de delineamento transversal e a técnica de grupo focal foi utilizada com 15 pacientes e 14 enfermeiros para identificar a opinião sobre a intervenção para adesão aos medicamentos cardioprotetores na atenção primária à saúde. As sessões foram gravadas em áudio, transcritas na íntegra e discutidas detalhadamente para obter concordância entre os avaliadores. A lista de verificação COREQ do EQUATOR foi utilizada. Os participantes sugeriram que a intervenção fosse aplicada de forma escrita e

verbal com duração aproximada de 30 minutos e reforço com intervalo de trinta dias. O esquecimento, a complexidade do regime terapêutico, a falta de acesso gratuito aos medicamentos, a compreensão limitada de sua doença e a escolha pessoal do paciente de não aderir, foram mencionados como barreiras à adesão. Os participantes ajustaram o modo de aplicação e a dose da intervenção.

Palavras-chave: Enfermagem; Adesão à Medicação; Comportamentos Relacionados com a Saúde; Intenção.

Resumen

Este estudio identificó las condiciones que aumentan la viabilidad, la aceptabilidad y el potencial de efectividad de una intervención para promover la adherencia a la medicación. Se trató de un estudio de diseño cualitativo, transversal y se utilizó una técnica de grupo focal con 15 pacientes y 14 enfermeras para identificar la opinión sobre la intervención para adherir medicamentos cardioprotectores en el servicio de atención primaria de salud. Las sesiones fueron grabadas en audio, transcritas en su totalidad y discutidas en detalle para obtener el acuerdo entre los evaluadores. Se utiliza la lista de verificación COREQ de EQUATOR. Los participantes sugieren que la intervención debe ser aplicada de forma escrita y verbal con una duración aproximada de 30 minutos y refuerzo con un intervalo de treinta días. El olvido, la complejidad del régimen terapéutico, la falta de libre acceso a los medicamentos, la limitada comprensión de su enfermedad y la elección personal del paciente de no adherirse, han sido mencionadas como barreras para la adherencia. Los participantes ajustaron el modo de aplicación y la dosis de la intervención.

Palabras clave: Enfermería; Cumplimiento de la Medicación; Conductas Relacionadas con la Salud; Intención.

1. Introduction

Adherence to cardioprotective medications by patients with a history of Myocardial Infarction (MI) is associated with a reduction in the incidence of acute ischemic events, rate of rehospitalization (Knuuti et al., 2020; Collet et al., 2020) and increased survival (Du et al., 2017). However, non-adherence behavior and discontinuation of medication treatment after an ischemic event occurs early after hospital discharge (Castellano et al., 2017).

Researchers show that interventions based in theory are more effective in achieving beneficial outcomes in health behaviors change, since they represent an in-depth understanding of mechanisms of change, and factors that may influence behavior (Davis et al., 2015). In the cardiac population, this impact of interventions to change non-adherence behavior is also present in rehabilitation programs (Zullig et al., 2017; van der Laan et al., 2017).

Among the theoretical models, it highlights the motivational models such as those using the Theory of Planned Behavior. According to which motivation supports the decisions of the individuals to execute a health behavior. The intention in the motivational model is defined as the principal determinant of action (Sniehotta et al., 2005; Armitage et al., 2000; Ajzen et al., 1991). However, this model mentions an important gap in the Intention-Behavior relationship, which is when an individual with positive intentions fails to perform the behavior (Wolf et al., 2005). One of the strategies used to fill this gap is the Implementation Intention.

The Implementation Intention strategy proposed by Gollwitzer (1999) aims to make the individual aware of a suitable future situation to promote the adoption of behavior. Some authors operate this strategy by decomposing it into two steps: Action Planning and Coping Planning (Gollwitzer, 1999; Sniehotta et al., 2005; Sniehotta et al., 2006). The Action Planning determines the "when", "where" and "how" the person can implement the target behavior, while in the Coping Planning, there are proposed strategies to overcome identified barriers to facilitate the performance of the behavior (Sniehotta et al., 2006).

A randomized clinical trial conducted in the Brazilian context with patients with a history of MI demonstrated efficacy in the implementation of intention to promote adherence to cardioprotective medications over two months follow-up (Lourenço et al., 2014). However, the experiential approach in the intervention proposition, that is, the patient's and the nurse's perceptions of what would be feasible and acceptable in the context of clinical practice, were not considered. The lack of these elements results in interventions that may be effective but difficult to adopt in the daily clinical practice (Lourenço et al., 2014).

The experiential approach is characterized by the active participation of the target population in the conception of the

intervention, through focal group discussion, and are therefore consistent with the beliefs, values, and preferences, besides being feasible in the patient's daily life. In addition, the inclusion of this approach enables a patient-centered approach widely accepted as a high-quality health care component (Sidani & Braden, 2011)

The nurse is the professional of excellence for the development of patient-centered interventions, since it adds, within the scope of its functions, the prevention health (Mosleh & Almalik, 2016). In this perspective, Sidani and Braden (2011) propose that the interventions are elaborated considering the particularities of the patient, as well as the actual context of clinical practice.

Therefore, the current study aimed to identify with MI patients and nurses from primary healthcare services, what would be the conditions that would increase the effectiveness, feasibility and acceptability of the activation of the intention strategy in the clinical context, in order to promote adherence behavior to cardioprotective medications, besides identifying the barriers and coping strategies that are usually adopted by these patients to take their medications.

2. Methodology

Design and Setting

This is a cross-sectional study with a qualitative approach, and it was developed in primary healthcare service in the State of São Paulo, Brazil. The current study used the EQUATOR checklist Consolidated Criteria for Reporting Qualitative research (COREQ) (Tong et al., 2007).

Participants and data collection

The sample consisted of 1. Patients with previous MI between 1 and 3 years of evolution, followed up in primary healthcare service, using cardioprotective medications (i.e., angiotensin converting enzyme inhibitor, angiotensin receptor antagonists, beta-blockers, lipid-lowering and antiplatelet agents) and who presented a positive intention for adherence, evaluated by self-reported measure of intention. Patients who had a history of recent hospitalization (< 3 months) or with cognitive deficits recorded in the medical records were excluded; 2. Nurses should be registered by the Regional Nursing Council (COREN), who work in the primary healthcare service.

Patients enrolled were invited to participate in the study by telephone contact from the principal researcher and the nurses were personally invited by the researcher to participate in the study, according to their availability.

Patients and nurses from this research field were sequentially enrolled during the data collection period, from 2017 to 2018. Fifteen patients (five patients in each focus group) and 14 nurses (two focus groups with five nurses and one focus group with four nurses) participated in the study. The sample size was established according to the saturation criterion (Sidani & Braden, 2011; Krueger & Ashwani, 2015).

There was a total of six focus groups sessions and three of them were conducted with patients and three with nurses, in a private room, in the primary healthcare service to identify the perception of both on the proposal of intervention (Sidani & Braden, 2011; Krueger & Ashwani, 2015).

The focus groups with patients and nurses were carried out by the principal researcher (moderator), assisted by a nurse previously trained and with knowledge of the methodology and objectives of the study (mediator). The common step for both groups was the reception of the participants who accepted to participate in the study by signing the consent form and filling in a sociodemographic form. The sessions were recorded in audio.

Focus group with patients: Twenty patients who met the inclusion criteria were invited to participate in the study, and 15 of them agreed. The patients focus groups were divided into two parts. The first one, which lasted approximately 30-60 minutes, was intended to initiate discussion on the disease, treatment, need for medication, as well as difficulties to include

medication in daily life (Simpson et al., 2000). In the second part, also lasted approximately 30-60 minutes, it was presented to the participants the principles of the intention activation strategy. Participants were invited to reflect on four main points: (I) the mode of application, i.e. the means by which the strategy should be implemented (e.g. written or verbal, face-to-face or distance); (II) the best technique to be used (pamphlet, computer, telephone contact, text messages), (III) the dose of the intervention (quantity and duration of each intervention session) and (IV) frequency (number of sessions necessary to apply the intervention during a specific period of time).

Focus group with nurses: Sixteen nurses who met the inclusion criteria were invited to participate in the study, and 14 of them agreed. This focus groups were divided into two sessions, with an approximate duration of 30 minutes each. The sessions were composed of (1) a brief introduction of their role in the nursing assistance provided to MI patients; 2. The principles of implementation intention strategy were presented and then nurses were encouraged to discuss the feasibility of intervention in the clinical practice routine as well as suggestion of adaptations.

Data analysis

The six sessions for both groups, nurses and patients, were codes in their entirety and the principal researcher carried out the reading of all the transcripts of the groups and the meanings that responded to the questions proposed for analysis (related time, mode of application of the intervention and number of reinforcements) were spelled out in the text and written to its margin. In addition, the meanings that were common and frequent in each discourse were identified, and then, great themes were established for the two groups. All interviews were submitted to the analysis of another researcher with experience in qualitative analysis of the data, to determine the agreement between the themes and the meanings found. The theme has been maintained since there was an agreement and, in case of disagreement, new topic was suggested.

Ethical considerations

The study was approved by the Research Ethics Committee of the university (Number 2,239,170) and all enrolled patients signed a consent form.

3. Results

Sociodemographic and clinical characterization

The patients (n=15) in the study were predominantly male (66.6%), mean age 65.6 (8.7) years, professionally inactive (86.6%), family monthly income of US\$773. Most of the patients (80.0%) had a diagnosis of MI and 2.9 (1.2) clinical conditions and / or associated risk factors. All patients reported symptoms in the month prior to the interview, with a mean of 1.7 (1.5) associated symptoms.

The group of nurses (n=14) were predominantly female (71.4%), with an average age of 30.5 (7.1) years old, an average of 8.6 (7.1) years working in the even primary healthcare service for 4,8 (0,8) years, reporting some kind of specialization after their bachelor's degree in nursing (50%).

Focus group with patient

Theme 1: adjusting the daily life activities after the cardiac event. The majority of patients reported the need to change habits in their daily life after cardiac events, adopting healthier behavior, and to understand the limitations caused by the presence of symptoms and the understanding of the need for medication in the context of the disease (condition to survive):

P₁: *The doctor made it very clear: either beer, or your life, beer does not combine with medication ... and I appealed*

for my life.

P₆: I cannot walk, work, I stopped doing many things I use to do. Burning inside. I lie with this pain burning and I get up with it.

Theme 2: Recognizing barriers to take the medication and adopting coping strategies. Some patients mentioned forgetting and to overcome it, they cited as strategies of overcoming the act of asking the doctor to simplify the regimen, placing the medication in visible places, to support the family, to write a schedule specifying the time for each medication:

P₁₀: I used to forget to take the pill in the afternoon. So, my cardiologist increased the dosage and now I only take one in the morning and one at night and I have not forgotten anymore.

P₁₄: My daughter puts everything on a tray on the table, so I do not forget, because I go to the kitchen all the time.

P₉: I made a schedule with the medication's name, number of pills and times, I put it in the refrigerator and today I have everything in my head.

The complexity of the therapeutic regimen and the side effects associated with medications have also been mentioned as barriers to the use of medications. Again, they mentioned the strategies to ask the doctor to simplify the regimen and asked for explanations about the purpose of each medication for the doctor or nurse:

P₃: It's too many medications that gives two pages of prescriptions. Then I asked to my doctor: could you simplify it? how many should I take during the day? Thereafter, she changed and now it is better.

P₈: Sometimes the medication does not do well, right? But everything comes in the prescription. Then I ask the doctor or nurse to explain what is causing this.

The lack of free access to medications in the public sector was also an important barrier reported by the research participants; the family was cited as a financial support for the purchase of medications and medication dose adequacy to be compatible with that provided by health centers as a strategy for overcoming:

P₁₂: I arrived at the pharmacy and they did not have two or more medications on my list. Apparently, they are cheap little things. But I am not prepared. I need my son's help to buy.

P₁₅: They do not have free enalapril 5mg in the public pharmacy, only 10mg. So, I need to ask my doctor to change and buy it every month, so I will not have to pay it anymore.

Theme 3: mode of delivery of the intervention and application technique. There was unanimous opinion of the respondents that the written and spoken form should be used to develop action plans and barriers to take medication. They also suggest that the application technique is through an individual approach during a nursing appointment intended only for this purpose:

P₁: Both things would be ideal since it guides the day of the consultation and if It's written, every day we will read it. It is easier to fix.

P₂: It must be an appointment just for this. Just to talk about the difficulties of taking the pills, because there is a lot of information at the same time.

Theme 4: dose of intervention. It was emphasized the importance of establishing a time limit for the application of the intervention, but the relevance of adjusting the duration according to the needs of each patient was emphasized:

P₆: I think it depends on each one. For me it would be better mostly for 30 minutes or more, attention begins to fail. But there are some people who need a little more or less time.

Theme 5: relevance, periodicity, and mode of delivery of intervention reinforcement. All the patients emphasized the importance of face-to-face reinforcement with a 30-day interval between the meetings. They also pointed out the importance of establishing the date of the next meeting in person, in the first meeting:

P₁₃: If she gives us that attention, it would be more pleasurable to live. Because someone is looking at us. That is why it is so important to keep the appointments, so that we reassess together if I am doing it right.

P₁₁: 1 month is good. You are going to get out of here, you are going to have a month to take the right medication until the return.

P₆: The scheduled appointment is better because you know the right day that you come back.

Focus group with nurses

Theme 1: approach of the patient with coronary diseases in the neighborhood clinic. Nurses emphasized the complexity of care due to the patient's multiple comorbidities. It was also highlighted the difficulty in tracking these patients in the primary healthcare system because they remain in treatment at the secondary and tertiary sectors of the public health service. The overload of nurse's work significantly limits the availability of schedules for the follow-up of these patients. The nurses also mentioned how difficult it is with patients not adhering to the treatment, even after several approaches:

N₁₄: It is usually a patient who has other comorbidities. In general, they have difficulties in adherence to treatment and changing behaviors.

N₁₀: Many of these patients are not in our daily routine. They are in the outpatient clinics. That is a problem because, sometimes, they do not come to the neighborhood clinic because they see the unit only as a place to treat diabetes and not heart disease.

N₁: We do not have time to attend anything. They miss appointments. At the next appointment, he did not even remember what you had said. And we get tired of repeating the same things all the time.

Theme 2: barriers to medication adherence. Nurses mentioned as the main barriers to medication adherence the patients' limited understanding of their disease, the complexity of the treatment regimen, the presence of side effects associated with the use of medication, the lack of access to free medications, the lack of family support, cognitive deficit and the patient's personal choice of not adhering:

N₄: They have difficulty to understand the disease itself. They do not pay attention on the importance of taking the medication.

N₂: There are so many prescription medications and they do not even know what to take.

N₁: When they associate the side-effects with the medication, they stop taking it.

N₆: In the recent months, there was a lot of medication shortage in the pharmacy. Then many patients started taking it

irregularly. Or they stopped taking it because they could not get access elsewhere.

N₁₀: It is very difficult to make family members understand that they have responsibilities and should help in the taking of medications.

N₁₂: There are patients who decide not to treat. In these cases, we do not argue.

Theme 3: strategies implemented by nurses to overcome non-adherence to medication treatment. There is no standardized protocol to address patient's non-adherence. Each nurse has a different approach:

N₁: There are patients that I need to explain the function of each pill. However, there are others that I segregate the pills according to the time of the day.

N₃: When I realize that the patient needs support at home, I call the family members and invite them to the next appointment.

Theme 4: mode of delivery of the intervention, application technique and dose. The nurses indicated the same mode of delivery, application technique and intervention dose. However, they emphasize the approaching the barriers in a gradual way so that the patient put it into practice, besides calling relatives when the patient is illiterate or has visual impairment:

N₁₁: Written and spoken, because there are patients who are listening to it and will understand reading better at home. It must be in an individualized moment with the patient.

N₇: 30 minutes. I think that more than this is a burden to the patient.

N₂: If the patient has five difficulties, I will work with it one at a time, otherwise the patient gives up, so he will not take the medication anymore.

N₈: There are patients that it takes you a longer time to overcome the barriers. Others contribute more, and you spend less time. For some patients who are illiterate or visually impaired, it will be necessary to call relatives.

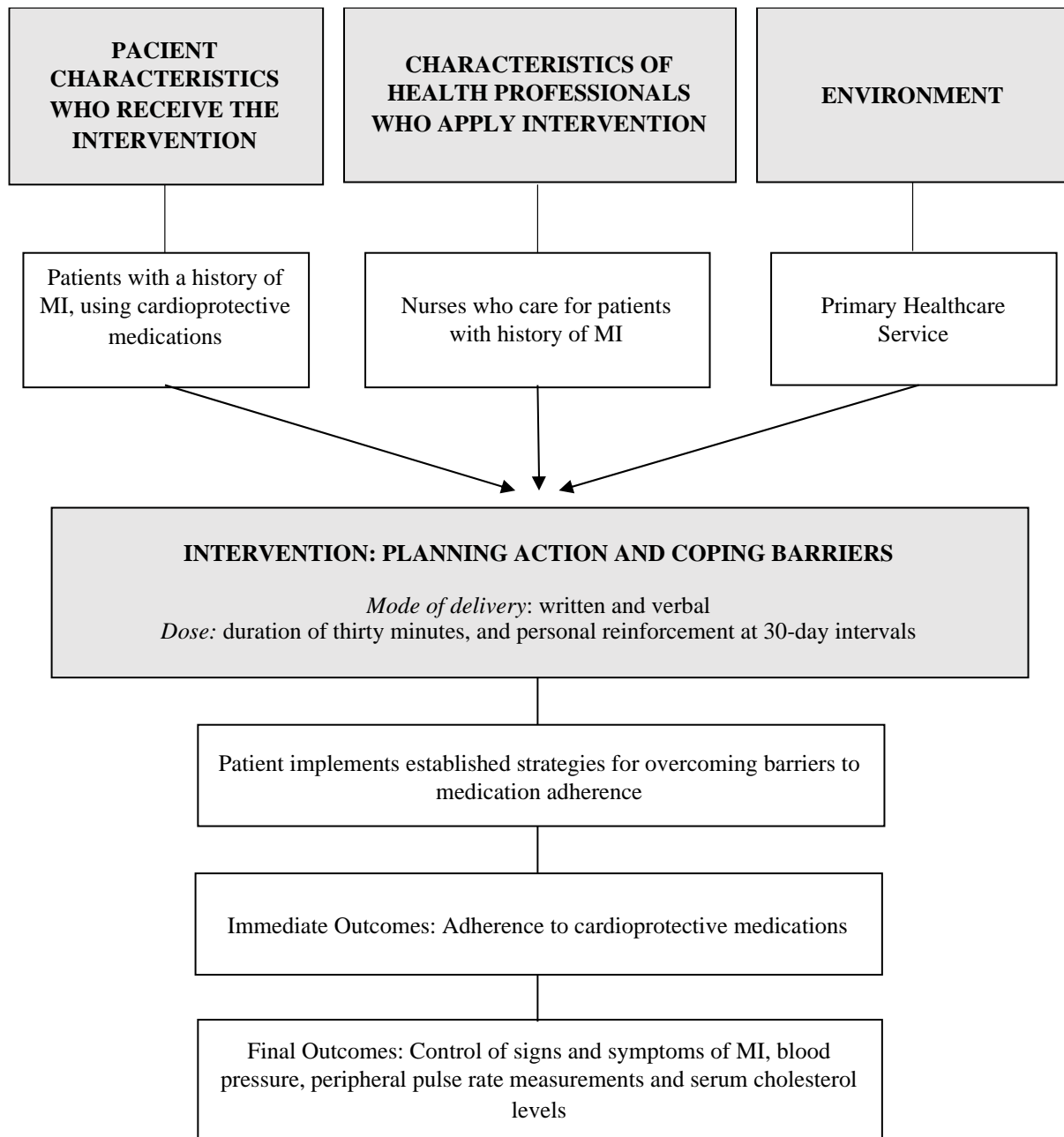
Theme 5: relevance, periodicity, and mode of delivery of intervention reinforcement. The continuous evaluation of the adherence behavior and the reassessment of the plans were indicated as justifications for the need of face-to-face reinforcement in the primary healthcare through a nursing appointment at the same time of the first meeting (30 minutes) and with a thirty-day follow-up:

N₁₀: If we do not re-evaluate something that we have previously decided to change in life, that is lost. I think that besides reinforcing and stimulating, it also serves to adjust the plans according to the new prescription or some change in the routine.

N₁₃: It is better if the patient leaves the first appointment with a return date. This generates an expectation of continued care. It should not exceed 30 minutes too.

The participants suggested some changes in the format of the plans as shown in Figure 1.

Figure 1: Results of intervention adequacy. Campinas, SP, Brazil.



Source: Authors.

4. Discussion

This study aimed to identify what would be the conditions, for patients and nurses, that would increase the feasibility, acceptability and effectiveness potential of the implementation intention intervention in the clinical context, besides raising barriers and coping strategies which are usually taken by patients to take their medications.

Bilondi et al. (2022) states that the patient's perception of his illness can influence his choices and coping strategies. Thus, adherence to health behaviors depends on the patient's understanding of his condition, his treatment, and the benefits of lifestyle modification (Nur, 2018). In fact, in the patients' speech, it was observed that the understanding of the disease, its risk and chronic character tends to positively influence medication adherence, which is seen as a necessary adjustment of the daily activities after the cardiac event and is accompanied by the change of other unhealthy habits. The perception of the limitations imposed by the disease as the experience of symptoms seems to reinforce the importance of the correct use of medications as a

condition to survive, as demonstrated in recent study (Thomson et al., 2020).

In the present study, the nurses reported difficulties in approaching the patient with history of MI because they presented multiple associated comorbidities, besides the work overload and the difficulty of inserting this patient in the primary healthcare system since they are already being followed in secondary services. However, the implementation of patient-centered care (PCC) is growing around the world because it is characterized by providing care that responds to patient needs and preferences by involving these individuals in decisions related to their own care plan, which in turn may lead to increase their satisfaction with the treatment and may lead to achieve best health outcomes (Bokhour et al., 2018; Schmittiel et al., 2015).

Participants on this study mentioned as the main barrier to taking the medications the forgetfulness, unavailability of free access to their medications and the complexity of the therapeutic regimen. A systematic review investigated the main barriers and facilitators of adherence to secondary prevention medications in cardiovascular diseases and pointed out that quantity of different medication classes, complexity of the regime associated with high cost were pointed out as reasons for the misuse of medications (Banerjee et al., 2016).

In the same way, the nurses pointed out as barriers to medication taking the lack of understanding of the disease, complexity of the therapeutic scheme, association of the beginning of a new symptom with the use of medications, lack of access to free medication, cognitive deficit, and the patient's personal choice not to adhere, which also corroborates the data in the literature (Khatib et al., 2019; Schmittiel et al., 2015). Patients and nurses in this study had similar perspective regarding the main barriers to patients adhere to their medication treatment.

Patient's and nurse's opinion regarding the design of the intervention was unanimous. Both suggested that the intervention should be applied in written and verbal form, lasting approximately 30 minutes considering the personal needs of each individual, making this time variable. It was also emphasized that the continuous evaluation of the adherence behavior and plans should be carried out in the face-to-face reinforcement, through a nursing appointment, with interval of 30-days. These data corroborate with the literature, making it possible to formulate individual plans, feasible for clinical practice and with greater chances of obtaining positive results (Hagger et al., 2016).

It is also important to highlight the importance of offering a high-quality training to facilitators, since they are responsible to formulating the plans in partnership with participants. A highly trained facilitator will allow the creation of a specific and high-quality plans (Luszczynska et al., 2007; Armitage, 2009).

Limitations

A few study limitations should be noted. First, all patients reported symptoms in the month prior to the interview that may have motivated their participation in the study and a greater concern about the disease. Second, half of the nurses who participated in the study had a specialization or master's degree, which may have motivated their participation in the study.

Practice Implications

This study makes available to the scientific community an intervention was adjusted to promote a change in health-related behaviors. The nurses reported that the implementation strategy of intention is feasible in clinical practice, since it is an intervention that does not require important changes in their work routine, besides improving the quality of care provided through the nursing appointment and stimulates the reflection about overcoming barriers to medication adherence.

5. Conclusion

The results of this study provide information on the ideal conditions pointed out by nurses and patients for the

implementation intervention. The participants pointed out the main barriers and coping strategies that are usually used to take their medications. They believe that the implementation intervention can be useful in their daily life and clinical practice, however, it will be necessary to evaluate the intervention in the ideal practice with greater precision.

Acknowledgments

The authors would like to thank all the patients and nurses who participated in the study and the commitment of the School of Nursing at the University of Campinas and Laval University, throughout all the study phases.

References

- Ajzen, I. (1991). The Theory of Planned Behavior. *Organizational Behavior and Human Decision Processes*, 50, 179-111.
- Armitage, J. C., & Conner, M. (2000). Social cognition models and health behaviour: a structured review. *Psychology & Health*, 15(2), 173-189. <https://doi.org/10.1080/08870440008400299>
- Armitage C. J. (2009). Effectiveness of experimenter-provided and self-generated implementation intentions to reduce alcohol consumption in a sample of the general population: a randomized exploratory trial. *Health Psychology*, 28(5), 545-553. <https://doi.org/10.1037/a0015984>
- Banerjee, A., Khandelwal, S., Nambiar, L., Saxena, M., Peck, V., Moniruzzaman, M., Faria Neto, J. R., Quinto, K. C., Smyth, A., Leong, D., & Werba, J. P. (2016). Health system barriers and facilitators to medication adherence for the secondary prevention of cardiovascular disease: a systematic review. *Open Heart*, 3(2), e000438. <https://doi.org/10.1136/openhrt-2016-000438>
- Bilondi, S. S., Noghabi, A. D., & Aalami, H. (2022). The relationship between illness perception and medication adherence in patients with diabetes mellitus type II: illness perception and medication adherence. *Journal of preventive medicine and hygiene*, 62(4), E966-E971. <https://doi.org/10.15167/2421-4248/jpmh2021.62.4.2277>
- Bokhour, B. G., Fix, G. M., Mueller, N. M., Barker, A. M., Lavela, S. L., Hill, J. N., Solomon, J. L., & Lukas, C. V. (2018). How can healthcare organizations implement patient-centered care? Examining a large-scale cultural transformation. *BMC Health Services Research*, 18(1), 168. <https://doi.org/10.1186/s12913-018-2949-5>
- Castellano, J. M., Fuster, V., Jennings, C., Prescott, E., & Bueno, H. (2017). Role of the polypill for secondary prevention in ischaemic heart disease. *European Journal of Preventive Cardiology*, 24(3_suppl), 44-51. <https://doi.org/10.1177/2047487317707324>
- Collet, J. P., Thiele, H., Barbato, E., Barthélémy, O., Bauersachs, J., Bhatt, D. L., Dendale, P., Dorobantu, M., Edvardsen, T., Folliguet, T., Gale, C. P., Gilard, M., Jobs, A., Jüni, P., Lambrinou, E., Lewis, B. S., Mehilli, J., Meliga, E., Merkely, B., Mueller, C., & ESC Scientific Document Group (2020). 2020 ESC Guidelines for the management of acute coronary syndromes in patients presenting without persistent ST-segment elevation. *European Heart Journal*, ehaa575. <https://doi.org/10.1093/eurheartj/ehaa575>
- Davis, R., Campbell, R., Hildon, Z., Hobbs, L., & Michie, S. (2015). Theories of behaviour and behaviour change across the social and behavioural sciences: a scoping review. *Health Psychology Review*, 9(3), 323-344. <https://doi.org/10.1080/17437199.2014.941722>
- Du, L., Cheng, Z., Zhang, Y., Li, Y., & Mei, D. (2017). The impact of medication adherence on clinical outcomes of coronary artery disease: A meta-analysis. *European Journal of Preventive Cardiology*, 24(9), 962-970. <https://doi.org/10.1177/2047487317695628>
- Gollwitzer, P. M. (1999). Implementation intentions: Strong effects of simple plans. *American Psychologist*, 54(7), 493-503. <https://doi.org/10.1037/0003-066X.54.7.493>
- Hagger, M. S., Luszczynska, A., de Wit, J., Benyamini, Y., Burkert, S., Chamberland, P. E., Chater, A., Dombrowski, S. U., van Dongen, A., French, D. P., Gauchet, A., Hankonen, N., Karekla, M., Kinney, A. Y., Kwasnicka, D., Hing Lo, S., López-Roig, S., Meslot, C., Marques, M. M., Neter, E., & Gollwitzer, P. M. (2016). Implementation intention and planning interventions in Health Psychology: Recommendations from the Synergy Expert Group for research and practice. *Psychology & Health*, 31(7), 814-839. <https://doi.org/10.1080/08870446.2016.1146719>
- Khatib, R., Marshall, K., Silcock, J., Forrest, C., & Hall, A. S. (2019). Adherence to coronary artery disease secondary prevention medicines: exploring modifiable barriers. *Open Heart*, 6(2), e000997. <https://doi.org/10.1136/openhrt-2018-000997>
- Knuuti, J., Wijns, W., Saraste, A., Capodanno, D., Barbato, E., Funck-Brentano, C., Prescott, E., Storey, R. F., Deaton, C., Cuisset, T., Agewall, S., Dickstein, K., Edvardsen, T., Escaned, J., Gersh, B. J., Svitil, P., Gilard, M., Hasdai, D., Hatala, R., Mahfoud, F., & ESC Scientific Document Group (2020). 2019 ESC Guidelines for the diagnosis and management of chronic coronary syndromes. *European Heart Journal*, 41(3), 407-477. <https://doi.org/10.1093/eurheartj/ehz425>
- Krueger, R. A., Ashwani, K. (2015). *Focus Group: A practical guide for applied research* (5th ed.). Thousand Oaks: SAGE Publications.
- Leventhal, H., Benyamini, Y., Brownlee, S., Diefenbach, M., Leventhal, E.A., Patrick-Miller, L., & Robitaille, C. (1997). Illness Representations: Theoretical Foundations. In: Petrie, K.J. and Weinman, J., Eds., *Perceptions of Health and Illness*, Harwood Academic Publisher, Amsterdam.
- Lourenço, L. B., Rodrigues, R. C., Ciol, M. A., São-João, T. M., Cornélio, M. E., Dantas, R. A., & Gallani, M. C. (2014). A randomized controlled trial of the effectiveness of planning strategies in the adherence to medication for coronary artery disease. *Journal of advanced nursing*, 70(7), 1616-1628. <https://doi.org/10.1111/jan.12323>

- Luszczynska, A., Sobczyk, A., & Abraham, C. (2007). Planning to lose weight: randomized controlled trial of an implementation intention prompt to enhance weight reduction among overweight and obese women. *Health Psychology, 26*(4), 507–512. <https://doi.org/10.1037/0278-6133.26.4.507>
- Mosleh, S. M., & Almalik, M. M. (2016). Illness perception and adherence to healthy behaviour in Jordanian coronary heart disease patients. *European Journal of Cardiovascular Nursing, 15*(4), 223–230. <https://doi.org/10.1177/1474515114563885>
- Nur K. (2018). Illness perception and cardiovascular health behaviour among persons with ischemic heart disease in Indonesia. *International Journal of Nursing Sciences, 5*(2), 174–180. <https://doi.org/10.1016/j.ijnss.2018.04.007>
- Sniehotta, F. F., Schwarzer, R., Scholz, U., & Schüz, B. (2005). Action planning and coping planning for long-term lifestyle change: Theory and assessment. *European Journal of Social Psychology, 35*(4), 565–576. <https://doi.org/10.1002/ejsp.258>
- Sniehotta, F. F., Scholz, U., & Schwarzer, R. (2006). Action plans and coping plans for physical exercise: A longitudinal intervention study in cardiac rehabilitation. *British Journal of Health Psychology, 11*(Pt 1), 23–37. <https://doi.org/10.1348/135910705X43804>
- Sidani, S.; Jo Braden, C. (2011). *Design, evaluation, and translation of nursing interventions*. Chichester: Wiley-Blackwell.
- Simpson, S. H., Farris, K. B., Johnson, J. A., & Tsuyuki, R. T. (2000). Using focus groups to identify barriers to drug use in patients with congestive heart failure. *Pharmacotherapy, 20*(7), 823–829. <https://doi.org/10.1592/phco.20.9.823.35205>
- Thomson, P., Rushworth, G. F., Andreis, F., Angus, N. J., Mohan, A. R., & Leslie, S. J. (2020). Longitudinal study of the relationship between patients' medication adherence and quality of life outcomes and illness perceptions and beliefs about cardiac rehabilitation. *BMC Cardiovascular Disorders, 20*(1), 71. <https://doi.org/10.1186/s12872-020-01378-4>
- Tong, A., Sainsbury, P., & Craig, J. (2007). Consolidated criteria for reporting qualitative research (COREQ): a 32-item checklist for interviews and focus groups. *International Journal for Quality in Health Care, 19*(6), 349–357. <https://doi.org/10.1093/intqhc/mzm042>
- Schmittiel, J. A., Nichols, G. A., Dyer, W., Steiner, J. F., Karter, A. J., & Raebel, M. A. (2015). Health care system-level factors associated with performance on Medicare STAR adherence metrics in a large, integrated delivery system. *Medical Care, 53*(4), 332–337. <https://doi.org/10.1097/MLR.0000000000000328>
- van der Laan, D. M., Elders, P. J., Boons, C. C., Bosmans, J. E., Nijpels, G., & Hugtenburg, J. G. (2017). The (cost-)effectiveness of a patient-tailored intervention programme to enhance adherence to antihypertensive medication in community pharmacies: study protocol of a randomised controlled trial. *Trials, 18*(1), 29. <https://doi.org/10.1186/s13063-016-1696-3>
- Wolf, M. S., Bennett, C. L., Davis, T. C., Marin, E., & Arnold, C. (2005). A qualitative study of literacy and patient response to HIV medication adherence questionnaires. *Journal of Health Communication, 10*(6), 509–517. <https://doi.org/10.1080/10810730500228631>
- Zullig, L. L., Ramos, K., & Bosworth, H. B. (2017). Improving Medication Adherence in Coronary Heart Disease. *Current Cardiology Reports, 19*(11), 113. <https://doi.org/10.1007/s11886-017-0918-y>