

Nursing Interventions Promoting Adherence to Oral Medication in Oncology: Integrative Literature Review

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Abstract: ***Background:** Recently, emerged new antineoplastic drugs favoring the oral administration. These drugs provide a convenient administration for the user. However, they represent a challenge in terms of safety and adherence since there is a transfer of responsibility from health professionals to the user. **Aim:** This integrative literature review aims to identify the nursing interventions used to promote adherence to oral medication in oncology. **Methods:** The search took place between October and November 2022. We accessed the data bases through the Ebscohost platform; consulted the Open Access Scientific Repository of Portugal, the BVS Enfermagem and searched the Google Academic database. **Results:** The nursing interventions promoting adherence to oral medication in oncology were adherence risk assessment; structured education aimed at medication adherence; continuous assessment of medication adherence; proactive monitoring of needs and difficulties; coaching; motivational interview; implementation of a structured oral medication adherence program; technological interventions through digital applications; supportive measures. **Conclusion:** An assessment of the risk of non - adherence allows establishing personalized strategies that enhance patient's adherence to medication. The implementation of a structured adherence program is the most frequent option to increase the outcomes of its users. Educational follow - up through regular motivational interviewing increases patients' self - efficacy levels and, consequently, their medication adherence levels.*

Keywords: medication adherence, oncology nursing, cancer treatment protocols

1. Literature Survey

In recent years, we have seen the emergence of new antineoplastic drugs in tablet or capsule form, favoring the oral administration self - administered by the patient/caregiver. Orally administered antineoplastic drugs provide a convenient administration for the user. However, they represent a challenge in terms of safety and adherence, since there is a transfer of responsibility from health professionals to the user (Fennimore, 2017).

Medication adherence is defined as the ratio between the number of doses of medication taken and the number of doses prescribed over a given period (Steiner, 1997).

Medication adherence in oncology is influenced by a person's beliefs, level of health literacy, coping skills and self - efficacy, mood (affective state), disease symptoms, disease severity, fear of recurrence, adverse events caused by medications, complexity of administration protocols, the user's relationship with health professionals and previous experiences (Komatsu, 2022; Marshal, 2018).

The role of oncology nurses responsible for the administration of orally administered antineoplastic drugs (OAAD) is to ensure adequate education and support to

patients. The nurse should refer to the appropriate dosage, safe handling techniques, recognition of critical side effects to report, dietary restrictions, drug interactions, and the importance of medication adherence (Lee, 2022).

Aim of the Integrative Literature Review

This review aims to identify the nursing interventions used to promote adherence to oral medication in oncology.

2. Methodology

This integrative literature review (ILR) was developed in accordance with the Joanna Briggs Institute [JBI], (2020), guidelines for Mixed Methods Systematic Review (MMSR) studies.

Research question

To guide our research, we formulated the following research question: "What are the nursing interventions used to promote medication adherence with orally administered antineoplastic drugs in the adult population?"

Inclusion criteria

According to the literature, the acronym PCC (Population; Concept; Context) is the most appropriate when developing an ILR; however, given that our review focuses on the

interventions promoting therapeutic adherence and not on the concept itself, we believe that the acronym PICO (Population; Intervention; Context; Outcomes) is the most appropriate (Joanna Briggs Institute, 2020).

The organization of information guided by the acronym PICO, allows determining the inclusion criteria in the selected studies: P - adult population under treatment with orally administered antineoplastic drugs; I - interventions used to promote medication adherence; C - oncology nursing; O - adherence to oral medication regimen.

Research strategy

The search took place between the months of October and November 2022. The databases CINAHL® Plus, Nursing & Allied Health Collection, Cochrane Plus Collection, MedicLatina and MEDLINE® were accessed through the Ebscohost platform on the Ordem dos Enfermeiros (OE) website; also on the OE website, we consulted the Open Access Scientific Repository of Portugal (RCAAP) and BVS Enfermagem.

We also searched the Google Academic database.

Search terms

We began by verifying and validating the descriptors "medication adherence", "Oncology nursing" and "cancer treatment protocols" with which we performed the search. We used the Boolean operators AND and OR and thus obtained the search phrase ("Medication adherence" AND "Oncology Nursing" AND "Antineoplastic protocol").

Study selection

The search was limited to publications from the last 5 years.

To minimize bias, two reviewers independently assessed the inclusion of studies. A third reviewer was consulted in case of disagreement or doubts. This selection process will be presented in the PRISMA flowchart with the results of the screening in its various stages.

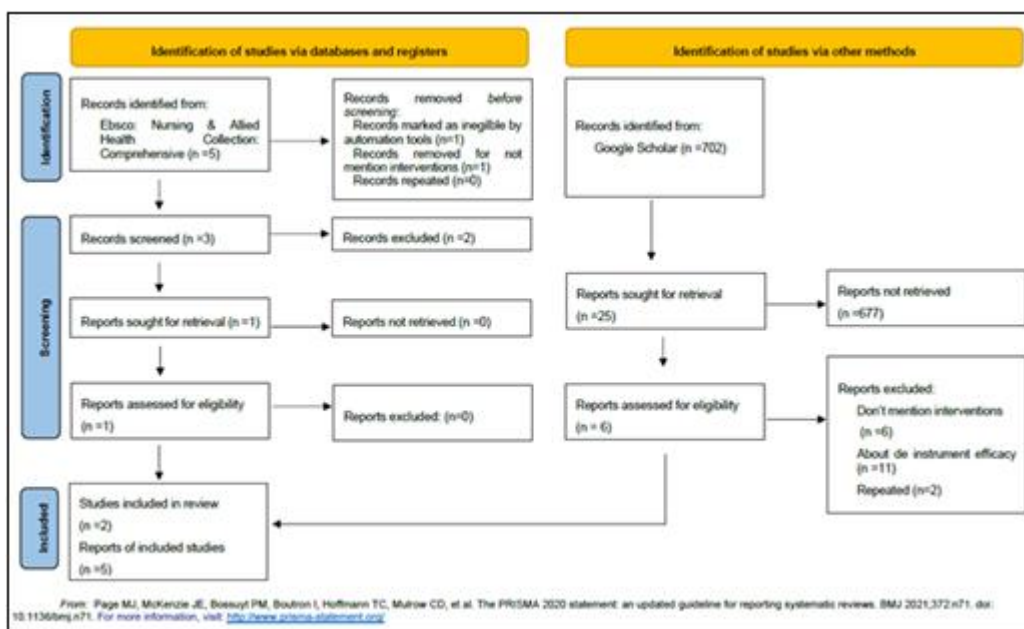


Image 1: PRISMA 2020 flow diagram for new systematic reviews which included searches of databases, registers, and other sources

3. Results

In the data extraction phase, a descriptive assessment of each study was initially conducted using the data extraction tools proposed by JBI (2020) for qualitative studies, mixed and

text publications to extract information according to the research question.

The same two reviewers performed data extraction independently and any doubt or disagreement was resolved by consulting a third reviewer.

Table 1: Results of publications and studies selected.

Publication (authors and year of publication)	Purpose of the study	Methodology, level of evidence and degree of recommendation	Medication adherence promoting interventions in oncology nursing	Results and key findings
A - ONS Guidelines to Support Patient Adherence to Oral Anticancer Medications Belcher, Sarah M; Mackler, Emily; Muluneh, Benyam;	This guideline is evidence - based and aims to support patients and health professionals regarding interventions and processes that support patient adherence to	A panel of health professionals and patient representatives developed a clinical practice guideline to support OAAD users. It is a narrative synthesis. Level of evidence 5. a	<ul style="list-style-type: none"> • A Risk assessment of non - adherence, • structured education addressing adherence, • ongoing assessment; • proactive follow - 	As cancer treatment moves from the clinical setting to the home, interventions and programs are needed to support patients using OAAD.

<p>Ginex, Pamela K; Anderson, Mary K; Bettencourt, Elizabeth; DasGupta, Ryan K; Elliott, Jennifer; Hall, Erica; Karlin, Michelle (2022)</p>	<p>OAADs.</p>	<p>Grade of recommendation A.</p>	<p>up; <ul style="list-style-type: none"> coaching and motivational interviewing; implementation of a structured adherence program OAAD. </p>	
<p>B - Interventions to Support Adherence to Oral Anticancer Medications: Systematic Review and Meta - Analysis. Waseem, H., Ginex, P. K., Sivakumaran, K., DeGennaro, G. M., Lagler - Clark, S., LeFebvre, K. B., Palmer, N., Pasumarthi, T., Rieger, P., Thoele, K., & Morgan, R. L. (2022)</p>	<p>This systematic review and meta - analysis compared the effectiveness of program interventions with usual care in adherence to OAAD.</p>	<p>Systematic review and meta - analysis. Publications between January 2000 and May 2021 were included. Level of evidence 3. b Grade of recommendation A.</p>	<ul style="list-style-type: none"> Assessment of risk of non - adherence; continuous or periodic assessment of adherence; motivational interview; proactive monitoring; structured education programs; coaching; Technological intervention (use of digital applications). 	<p>Risk assessment, continuous or periodic assessment, proactive follow - up, motivational interviewing or structured programs can improve adherence. Education or coaching interventions may improve or have little or no effect on adherence. Technological interventions may improve adherence, but interactive compared to non - interactive technology may have little or no effect.</p>
<p>C - Cancer Care Team Education and Oral Anticancer Medication Adherence Lee, A. (2022)</p>	<p>Implementation of a continuous improvement project for cancer treatment nursing team education and adherence to OAAD.</p>	<p>Master's thesis. Self - completion questionnaire was used before and after the educational intervention. The educational program was based on the guidelines for safe administration of OAAD of the American Society of Clinical Oncology and the Oncology Nursing Society of 2016. Quantitative analysis and descriptive statistics were used. Level of evidence 4. a Grade of recommendation A.</p>	<ul style="list-style-type: none"> Initial diagnostic evaluation; remote care via telephone or electronically; establishing a treatment surveillance program; education on appropriate dosage, safe handling techniques, recognition of critical side effects to report, dietary restrictions, drug interactions; supportive measures for medication adherence. 	<p>The post - intervention scores were 100% compared to 93.2% obtained in the pre - intervention assessment, demonstrating improved knowledge of OAAD management after the application of the educational intervention.</p>
<p>D - The Effect of Educational Follow - Up with the Motivational Interview Technique on Self - Efficacy and Drug Adherence in Cancer Patients Using Oral Chemotherapy Treatment: A Randomized Controlled Trial. Gönderen Çakmak, H. S., & Kapucu, S. (2021)</p>	<p>This study determined the effect of educational follow - up with motivational interviewing technique on drug adherence and self - efficacy in cancer patients using at least one oral chemotherapy drug.</p>	<p>Randomized study with control group. Data collection using the medication adherence self - efficacy scale (MASES), and the oral chemotherapy adherence scale (OCAS). Level of evidence 1. c Grade of recommendation A.</p>	<ul style="list-style-type: none"> Structured teaching; motivational interview. 	<p>At the end of the study, the level of drug adherence and self - efficacy of patients who received educational follow - up with the motivational telephone interviewing technique increased significantly (P < 0.001). In addition, the patient's level of self - efficacy increased (P < 0.001).</p>
<p>E - Effects of a nurse - led medication self - management program in women with oral treatments for metastatic breast</p>	<p>The study evaluated the effects of a patient - centred medication self - management support program aimed at patients with metastatic breast</p>	<p>Two - phase mixed method randomised controlled trial. The study took place between April 2015 and March 2018. Data collection in an</p>	<ul style="list-style-type: none"> Patient - centred drug self - management support program which consisted of self - management of oral 	<p>Both intervention and control groups maintained more than 90% medication possession ratio and no significant difference was observed in the primary outcome. Regarding the secondary outcomes, only overall self - efficacy was</p>

<p>cancer: A mixed - method randomised controlled trial. Komatsu, H., Yagasaki, K., Yamaguchi, T., Mori, A., Kawano, H., Minamoto, N., Honma, O., & Tamura, K. (2020)</p>	<p>cancer being treated with OAAD.</p>	<p>interview where the medication possession ratio is calculated. Level of evidence 1. c. Grade of recommendation A</p>	<p>administration, the concepts of concordance and shared decision - making with a patient - centred approach; basic knowledge and optimal management of oral chemotherapy and targeted therapy; and teaching and effective communication skills.</p>	<p>significantly different in both groups. In the qualitative study, nurses perceived improvement in patients' self - efficacy, their ability to anticipate the impact of treatment, adjust to life and avoid loneliness. The improvement in patients' self - efficacy was observed both quantitatively and qualitatively.</p>
<p>F - The effect of a mobile application on treatment adherence and symptom management in patients using oral anticancer agents: A randomized controlled trial. Karaaslan - Eşer, A., & Ayaz - Alkaya, S. (2021)</p>	<p>The study investigated the effect of a mobile application developed for patients using OAAD on treatment adherence and symptom management.</p>	<p>Randomized controlled trial. Data collection by the Oral Chemotherapy Adherence Scale (OCAS) and by the Memorial Symptom Assessment Scale (MSAS). Level of evidence 1. c. Grade of recommendation A</p>	<ul style="list-style-type: none"> • Use of an electronic application 	<p>There was found to be no difference between the intervention and control groups in mean scores on the oral chemotherapy adherence scale at baseline ($p > 0.05$), and the mean score in the intervention group increased in the first, third - and sixth - month measurements ($p < 0.05$). There was found to be no difference between the intervention and control groups in the mean scores of the memorised symptom assessment scale ($p > 0.05$), and there was a decrease in the mean score on this scale in the intervention group between the third and sixth month of follow - up upwards ($p < 0.05$). The results of the present study showed that the mobile app is effective in managing symptoms and increasing treatment adherence. A well - designed mobile health app that increases treatment adherence, decreases symptom severity, and supports patient self - management may be beneficial for those using OAAD.</p>
<p>G - Oral medication adherence, attitude, and quality of life in older adults with cancer: The impact of motivational interviewing Tipton, Janelle (2022)</p>	<p>This project explored the influence of Motivational Interviewing on adherence and attitudes towards OAADs and what impact it has on quality of life and health in older people with cancer.</p>	<p>Qualitative study with convenience sampling. Data collection by semi - structured interview. Level of evidence 4. b Grade of recommendation A</p>	<ul style="list-style-type: none"> • Motivational interviewing. 	<p>Adherence scores were very good at the start of the study in some patients who appeared to be more at risk of non - adherence. Adherence was approximately 87% at the start of the study and increased to approximately 93% by the last 3 interviews. This 6% improvement over the 3 interviews may have been attributed to the motivational interviewing intervention.</p>

4. Discussion

Assessment of the risk of non - adherence is included in three of the publications included in the review (A, B, C), which have levels of evidence ranging from 3. b to 5. a. This intervention is of major importance because it allows the identification of the main obstacles and difficulties in the adherence to OAAD, offering necessary data for the elaboration of a personalized care plan. The knowledge of these obstacles and difficulties also allows for a targeted initiative - taking intervention, increasing the likelihood of

positive health outcomes (Belcher, et al., 2022; Lee, 2022; Waseem, 2022).

Structured education aimed at medication adherence is referenced as an intervention promoting medication adherence in publications A, C, and D. Its levels of evidence range from 1. c to 5. a, with a grade of recommendation A (Belcher, et al., 2022; Gönderen Çakmak & Kapucu, 2021; Lee, 2022). In 2017, the Multinational Association of Supportive Care in Cancer (MASCC) Oral Agent Teaching Tool (MOAT) was identified as an effective structured

education model in promoting adherence to OAAD administration (Kav, 2017; Tokdemir, 2017).

The continuous assessment of adherence to OAADs using structured scales, including remote contact via phone or video call, the proactive monitoring of the needs and difficulties of patients using OAADs, Coaching, and the support measures for medication adherence, including the development of a therapeutic relationship, are found in publications A, B, C, D, and E with levels of evidence ranging from 1. c to 5. a and grade of recommendation A. The instruments for assessing medication adherence in these publications are the Oral Chemotherapy Adherence Scale (OCAS) and the Medication Possession Ratio (MPR) (Belcher, et al., 2022; Gönderen Çakmak & Kapucu, 2021; Kpmatsu, 2020; Lee, 2022, Wasseem, 2022).

Motivational interviewing, which includes the development of a therapeutic relationship, is mentioned as an intervention that promotes adherence to OAADs in publications B, D and G, with levels of evidence ranging from 1. c to 4. b and grade of recommendation A. Self - efficacy skills are directly correlated with adherence behaviour, thus, by enhancing self - efficacy in motivational interviewing, positive results are obtained in this behaviour (Gönderen Çakmak & Kapucu, 2021, Tipton, 2022, Waseem, 2022).

The implementation of a structured program for adherence to OAADs that includes education and surveillance activities is advocated in publications and studies A, B, C and E, with levels of evidence ranging from 1. c, 3. b, 4. a, 5. a and grade of recommendation A. In research E, we found a negligible difference in the control group regarding the variable "medication adherence"; however, we found a significant improvement in self - efficacy, in the ability to anticipate the impact of treatment on quality of life by performing a positive adjustment and in the way to avoid loneliness (Belcher, et al., 2022; Komatsu, 2020; Lee, 2022; Waseem, 2022).

Technological interventions through digital applications are referenced in publications B and F, with levels of evidence 1. c and 3. b, and grade of recommendation A. The systematic review and meta - analysis presented in publication B does not find an improvement in adherence comparing an interactive app with a non - interactive app. The research presented in publication F demonstrates that the mobile app can be effective in managing symptoms and increasing medication adherence (Karaaslan - Eser, 2021, Waseem, 2021).

5. Study Limitations

The main limitation of this integrative review is that it included research with levels of evidence lower than 3. b.

6. Conclusion

An assessment of the risk of non - adherence allows for the establishment of personalised strategies that enhance patient adherence to medication. The implementation of a structured program for adherence to OAADs seems to be the most frequent option to increase the outcomes of its users.

Educational follow - up through regular motivational interviewing increases patients' self - efficacy levels and, consequently, their medication adherence levels.

7. Future Scope

The ILR prepared enables access to current Evidence Based Practice grounding a clinical practice of excellence obtaining results of adherence to OAADs that can be benchmarked. Being research with scientific integrity, it will serve as a reference for new studies on the subject.

Disclaimers - The authors affirm on their word of honour that the content presented in this Integrative Literature Review is solely and exclusively of their authorship.

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