ESPACOMP 2024

Abstracts selected for poster presentations

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The effect of in-hospital medication self-management (SelfMED) on medication adherence in polypharmacy patients post-discharge: protocol of a pre-post intervention study

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Abstract

Introduction: Healthcare providers usually manage medication for patients during hospitalisation, although patients are expected to self-manage their medication post-discharge. Lack of self-management competencies is associated with low adherence and medication errors harming patients' health. When self-management is allowed during hospitalisation, it often lacks a structured, evidence-based approach. Therefore, an in-hospital medication self-management intervention, SelfMED, was developed based on existing evidence.

Aim: Since empirical data on SelfMED's effectiveness are lacking, this study aims to evaluate its effect on medication adherence two months post-discharge in patients with polypharmacy.

Methods: A multicentre pre-post intervention study is conducted. This study begins with a control phase investigating usual care (i.e., medication management provided by healthcare providers), followed by an intervention period, investigating the effects of SelfMED. SelfMED consists of multiple components: (1) a stepped assessment evaluating patients' eligibility for in-hospital medication self-management, (2) a monitoring system allowing healthcare providers to follow-up medication management and detect problems, (3) a supportive resource for healthcare providers to act upon observed problems with medication self-management. Medication adherence two months post-discharge, measured by pill counts, is the primary outcome. Secondary outcomes include self-management, medication knowledge, patient and staff satisfaction, perceived workload and healthcare service utilization.

Results: Recruitment of patients receiving usual care is ongoing. The control group's medication adherence, medication knowledge, patient satisfaction and healthcare services utilization two months post-discharge will be presented.

Conclusions: The results of this pragmatic study will assist healthcare organisations and providers in making informed decisions about implementing medication self-management programs in practice.

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Breaking down economic barriers: A scoping review of interventions addressing cost-related medication nonadherence in diabetes care

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Abstract

Introduction: Many patients with diabetes in the U.S. have difficulty affording healthcare; up to 17% ration their medications to save costs. One promising area for addressing cost-related nonadherence involves interventions that reduce/eliminate medication costs.

Aim: Our objective was to describe interventions that addressed cost-related nonadherence among patients with diabetes.

Methods: We identified studies using MEDLINE, Embase, and Scopus. Studies were eligible if they were conducted after 2003, published in English, described interventions or policies that reduced diabetes medication costs, and evaluated medication adherence as an outcome. Two independent reviewers assessed the abstract and full-text of each article in two phases.

Results: The electronic search pulled 7,014 abstracts, and 29 articles met inclusion criteria. Sixteen interventions reduced diabetes-related costs; 7 of these found improvements in medication adherence, 6 found no improvement, and 3 did not evaluate changes over time. Eight interventions eliminated diabetes-related costs; 5 found improvements in medication adherence, 2 found no improvement, and 1 did not evaluate changes over time. Six articles evaluated changes in adherence after implementation of a statewide/federal policy reducing or eliminating diabetes-related costs (e.g., Medicaid expansion), with varying effects on adherence. No studies adopted the Ascertaining Barriers to Compliance (ABC) taxonomy of adherence. Additionally, many interventions were associated with higher pharmacy costs, lower inpatient costs, reduced emergency department visits, and A1c improvements.

Conclusions: Interventions/policies that address diabetes-related costs largely had a positive effect on adherence. Further research is needed to evaluate the characteristics of interventions most likely to lead to the greatest improvements in adherence.

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Overuse of beta-2 agonists and asthma status among individuals with asthma

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Abstract

Introduction: Overuse of beta-2 agonists is associated with exacerbations and increased mortality and is often caused by lack of implementation of preventive corticosteroid therapy in asthma.

Aim: The aim was to compare self-reported overuse with register data of dispensed medication and investigate the two methods' relationship with asthma status.

Methods: Individuals with asthma (> 18 years), visiting primary care centres in Gothenburg, Sweden, answered a questionnaire about barriers to care, use of asthma medication, socioeconomic information, and filled in the Asthma Control Test (ACT). Questionnaire information was compared with individual data from the Swedish Prescribed Drug Register on asthma medication dispensed 365 days earlier. Self-reported overuse of beta-2 agonists was analysed in relation to overuse of dispensed short-acting beta-2 agonists (SABA) (> 600 doses per year) (chi-square test), and both methods were assessed in relation to asthma status (t-test).

Results: Self-reported overuse of beta-2 agonists was reported by 27.4% (n=84), while 20.9% had been dispensed 600 doses or more of SABA (n=86). Among those who reported overuse, 34.8% had collected > 600 doses compared to 14.8% of those who did not report overuse (p=0.042). Average ACT-score was significantly lower (p=0.047) among those reporting overuse (16.3) compared to no overuse (18.6). There was no difference in ACT-score between SABA overuse and no overuse from the dispensing data.

Conclusions: Self-reported overuse of beta-2 agonists investigated via questionnaires may be a useful tool to target individuals who do not adhere to treatment recommendations, as well as to identify poorly controlled asthma.

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Investigating new dimensions of medication nonadherence among People with Type 2 Diabetes (PwT2D) in Singapore

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Abstract

Introduction: Although many determinants of medication nonadherence have been identified, there is still considerable unexplained variance in adherence and limited effectiveness in interventions. A new questionnaire, the Intentional Nonadherence Scale (INAS) identified 4 new factors in earlier studies. However, its utility in People with Type 2 Diabetes (PwT2D) in Singapore has not been examined.

Aim: We aimed to investigate the psychometric properties of the INAS among PwT2D in Singapore.

Methods: This study examined adherence to medications and intended the findings to be applicable to PwT2D at different phases of adherence. The INAS was translated, culturally adapted and evaluated for its content validity through cognitive interviews with 20 healthcare professionals and PwT2D. Additionally, 290 PwT2D were recruited, with 53 followed up in 2 weeks and 185 followed-up in 3-6 months. Internal reliability, test-retest reliability, structural validity, construct validity and predictive validity were assessed. Exploratory Factor analysis, Spearman correlation, Quantile and Linear regression were performed.

Results: EFA revealed 4 factors, namely "*Resisting illness and medication", "Sensitivity to medication", "Testing treatment"* and "*Inconvenience"*. They showed good internal consistency (Cronbach's alpha = 0.84-0.94) and moderate test-retest reliability (intraclass correlation coefficient = 0.50-0.62). Construct validity was demonstrated in their relationship with a clinically relevant biomarker (glycated haemoglobin) and other self-report measures. Evidence of predictive validity was found.

Conclusions: The INAS explained significant variance in intentional nonadherence and revealed new areas for early targeted intervention. Current work is evaluating the INAS among PwT2D in the UK and will compare the findings cross-culturally.

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A systematic review of the impact of shared decision making on medication adherence in patients with chronic lung diseases: the MANGO study

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Abstract

Introduction: Medication nonadherence is common in patients with chronic lung diseases. Shared decision making (SDM) has been proposed as intervention to improve medication non-adherence, but it is unclear to what extent and how SDM contributes to improved medication adherence.

Aim: The aim of this study was to identify the extent, consistency and quality of the evidence of the effectiveness of SDM(-based) interventions on medication adherence in patients with chronic obstructive pulmonary disease (COPD), asthma and cystic fibrosis (CF).

Method: A systematic literature search was conducted in CINAHL, Cochrane Central Register of Controlled Trials, EMBASE, Medline, and PsycINFO in November 2023. Randomised controlled trials (RCTs) were included if the study included patients with COPD, asthma or CF, an SDM intervention and medication adherence to inhalation medication as outcome measure.

Results: From 675 retrieved studies, only four RCTs (asthma n=2, COPD n=2) met all inclusion criteria. All studies showed a positive effect, which was statistically significant in three. There was considerable variation in study and intervention characteristics. Risk of bias was high and only one study intervention was based on a behavioural theory. Three pathways of suggested intervention mechanisms were identified: activation, education and personalised treatment plan.

Conclusions: Limited evidence suggests a positive effect of SDM on medication use. Understanding how SDM contributes to enhanced adherence remains to be uncovered.

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Understanding gaps in the reporting of cardiovascular disease medication adherence interventions – An umbrella review protocol.

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Abstract

Introduction: Despite the existence of guidelines for the development, evaluation and description of complex behaviour change interventions, medication adherence interventions continue to be poorly described in the literature. This complicates evidence synthesis and replication efforts. Systematic reviews are used to inform clinical guidelines and the development of novel interventions, therefore limitations in intervention description may impact significantly future practice and research.

Aims: This umbrella review aims to identify common gaps in the reporting of medication adherence interventions and propose solutions for addressing these gaps.

Methods: This review focuses on interventions to improve adherence to prescribed medications for the treatment or prevention of cardiovascular diseases (CVD (https://osf.io/4dz6v/). This scope is due to CVD being the leading cause of global mortality, requiring regular medication for effective management as well as prevention. A PUBMED search was conducted for systematic reviews, with or without meta-analysis, published between 2019 and 2024. Following deduplication and screening of titles/abstracts and full texts, a standardized data extraction form will be used to capture descriptions of intervention and comparator (standard care) components following the TIDieR Framework, and their active mechanisms.

Results: Initial searches returned 754 papers for screening. Screening, full text review, data extraction and analysis are currently underway. Data will be summarised descriptively to identify recurring gaps and challenges in reporting.

Conclusions: Our findings will highlight barriers to effective evidence synthesis from existing studies on medication adherence interventions. This review will inform the development of a framework to improve the reporting of complex medication adherence interventions.

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Quality and impact of pharmacology digital simulation education on pre-registration healthcare students: A systematic literature review

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Abstract

Aim: This review aimed to assess the quality and nature of the literature related to digital simulation-based pharmacology education. Specifically, we sought to understand the influence of simulations on the knowledge, satisfaction, and confidence of pre-registration nurses and other healthcare students participating in such educational programs.

Methods: Systematic review using the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) Statement. This review focused on the quantitative findings from the studies published from 2016 to 2023. Seven databases were searched. Only the studies that assessed the impact of digital simulation-based pharmacology education on pre-registration healthcare students' knowledge, satisfaction, and confidence were selected. Data were synthesized using a narrative approach. The Mixed Methods Appraisal Tool (MMAT) was used to assess the quality of the included articles.

Result: Out of 1587 articles,16 met the inclusion criteria. A wide variety of digital technologies have been utilised, such as virtual simulation, computer simulation (2D/3D), mixed reality, and augmented reality. The findings suggest that a digital simulation-based pharmacology education is an effective tool for enhancing students' knowledge, confidence, and satisfaction in learning pharmacological concepts. Furthermore, a blended teaching approach was found to be beneficial. However, the integration of the polypharmacy concept and the intra and interprofessional approach to teaching and learning was not evident in these studies.

Conclusions: This review provides evidence of the potential of digital simulation-based education in pharmacology teaching among healthcare pre-registration students. In the future, the integration of polypharmacy content with an intra and interprofessional teaching-learning approach is recommended.

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Factors affecting medication adherence in cystic fibrosis patients

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Abstract

Aim: Cystic fibrosis transmembrane conductance regulator (CFTR) modulators have revolutionized treatment of cystic fibrosis (CF). However, their effect may be hampered by non-adherence. We aimed to explore factors impacting CFTR-modulator adherence and study potential adherence enhancing tools.

Methods: A mixed method approach was used. First, a literature review explored adherence barriers and facilitators and existing adherence enhancing tools. Subsequently, a CF patient questionnaire was developed and conducted among patients (and/or their parents). In addition, semi-structured interviews were conducted with six patients and six healthcare professionals. Chi-square and Fisher's exact tests were used to study relations between adherence and patient characteristics.

Results: Seventy-six patients completed the questionnaire (46 adults, 30 children, response rate 44%). Facilitators for adherence included information provided by the hospital, maintaining a routine and having a supportive relationship with the CF team. Barriers for adherence included puberty, stress, emotional state, vacation and weekends. Children reported higher forgetfulness rates and lower adherence compared to adults. Twenty-five adults (60%) and six children (20%) used adherence-supporting tools. Pill boxes and alarms were most commonly used. A lower number of medications ($p = 0.012$) and absence of comorbidities were associated with reduced adherence ($p = 0.025$).

Conclusions: Barriers and facilitators for adherence to CFTR-modulators vary among CF patients, necessitating a personalised approach. Tools supporting adherence are not used often, especially by children. The unexpected inverse association of number of medications with non-adherence, may be explained by reduced disease perception. Further research should explore CF patient friendly adherence-supporting tools.

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Efficacy of a mobile phone app featuring a relational avatar for young Black men who have sex with men: 1-Month follow-up of the My Personal Health Guide randomized clinical trial

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Abstract

Aim: We performed a randomized clinical trial in young Black men who have sex with men (YBMSM) living with HIV in the US testing the efficacy of a mobile phone app, My Personal Health Guide. We hypothesized that the app would increase antiretroviral adherence. The app includes a realistic talking embodied relational avatar that educates, motivates, and empathizes.

Methods: YBMSM (18-34 years) living with HIV were recruited throughout the US and randomized 1:1 to either My Personal Health Guide or an attention control app. Inclusion criteria included self-reporting or provider referral for nonoptimal adherence or retention in care problems or recent viral nonsuppression. Self-reported adherence (greater or equal to 80% [optimal] vs less than 80%) using a 3-item measure at baseline and 1-month follow-up were compared using logistic regression with backward selection.

Results: Among 253 men, 73 (28.9%) reported less than 80% adherence at baseline and 61 (24.1%) were housing unstable. For the 132 men who were successfully contacted at 1-month, the My Personal Health Guide group had significantly higher odds of optimal adherence than the control group (OR 2.95, 95% CI 1.01-8.58).

Discussion: The My Personal Health Guide app demonstrated 1-month efficacy improving adherence. To our knowledge, this is the first adherence app designed to improve health behavior that features a relational avatar. This may be a promising approach to explore in other populations and conditions.

Conclusions: This randomized clinical trial is the first to demonstrate short-term adherence efficacy of a relational agent avatar.

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Improving initial medication adherence in cardiovascular disease and diabetes treatments in primary care: A cluster randomised controlled trial based on real-world data (the IMA-cRCT Study)

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Abstract

Aim: To evaluate the effectiveness of the Initial Medication Adherence (IMA) intervention in improving initiation (primary outcome), implementation, persistence, clinical parameters, and professional prescription behaviour (secondary outcomes).

Methods: The IMA-cRCT (NCT05026775) is a pragmatic cluster-randomised controlled trial with a hybrid effectiveness-implementation design. It was conducted in 24 Primary Care centres and 37 community pharmacies (>300 professionals) in Spain in 2022. Patients from the 12 intervention centres with a new prescription of antihypertensive, lipid-lowering, antiplatelet, and/or oral/injectable antidiabetic medication received the IMA intervention from General Practitioners, supported by Community Nurses and Pharmacists. The intervention promotes Shared Decision-Making (SDM) using decision aids (leaflets and website) compared to usual care. Real World Data (RWD) from electronic health records was used to evaluate the effectiveness of the intervention at twelve months using regression models considering cluster effect.

Results: A total of 4910 prescriptions were issued to 3629 patients. Preliminary analyses have not detected differences between groups in initiation (86.6% vs. 85.8%), implementation (72.5% vs. 71.2%), or persistence rates (67.4% vs.66.5%). Final results will be presented at the conference, including the impact on clinical parameters, cardiovascular risk, and professional prescription behaviour.

Conclusions: This study introduces an innovative methodology for evaluating complex behavioural interventions using RWD. Preliminary results have not demonstrated effectiveness in adherence. However, by triangulating these results with an implementation evaluation, we found that the IMA intervention based on SDM enhanced patient and professional experiences. These findings will be considered to interpret potential implications for clinical practice, health policies, and future research.

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Balancing work and health: the relationship between paid employment and treatment adherence in people with a chronic condition

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Abstract

Aim: A majority of the working-age population with a chronic condition participates in the workforce. Having a job might affect the ability to incorporate treatments into their daily schedule, but it is currently unclear to which extent job-related factors affect treatment adherence in the implementation phase.

Methods: Members of the Dutch National Panel of the Chronically ill and Disabled were sent questionnaires between April 2020 and April 2022 to collect data on treatment adherence and job-related factors. Treatment adherence covered both adherence to medication and to healthcare appointments, and was measured with the 2-item subscale of the Partners in Health Scale. Univariate and multiple logistic regressions examined the effects of employment type, contract type, hours of work, extent of both physical and psychological demands, limitations at work, inclusion at work and work-related medication self-efficacy on treatment adherence.

Results: In total 309 panel members who had paid work and used medication completed the questionnaires. 56% of participants were classified as being fully adherent. Inclusion at work was positively associated with adherence (AOR 1.50, 95% CI 1.00-2.25, p = .049). Also, a relationship between moderate physical job demands and adherence was found (AOR 0.49, 95% CI 0.26-0.92, p = .026). No significant associations were found between adherence and other variables.

Conclusions: These results imply that working at a workplace where one feels included and valued improves the likelihood of being adherent. This stresses the need to acknowledge and further explore the role of workplace culture in adherence science and practice.

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Patient perspectives on medicine information in digital format or paper

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Abstract

Aim: Patients need to be well-informed about their medicines for correct use and to enhance medication adherence in all stages of use. Effective information entails that the format and channel of medicine information are tailored to patient characteristics, such as (digital) health literacy. The aim of this study is to explore patients' perspectives towards different formats and channels of medicine information from the pharmacy, in relation to the patients' health literacy and digital health literacy.

Methods: Twenty-three qualitative, semi-structured interviews with adult patients and one focus group interview with six patients aged 55 and older were performed. Participants were presented with various formats of information (paper, online PDF, pull-down menu, video), and different channels for accessing digital information (e-mail, QR-code, patient portal).

Results: Most participants preferred digital formats of medicine information. The pdf was preferred among the digital formats because it was easy to access, simple to store digitally, and good for the environment. However, digital formats were difficult to access or use for some individuals, especially for elderly patients. All participants with limited digital health literacy preferred information on paper. Among the channels, email was preferred, because email was familiar for participants, easy to access and accessible at all times.

Conclusions: Given that patient preferences on medicine information vary, it is important that pharmacies offer different formats and channels of medicine information, and discuss with the patient which method suits best. This will result in effective patient education and optimal adherence support.

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Use of lipid-lowering drugs in patients living in the Valle d'Aosta Region (Italy)

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Abstract

Aim: This study aimed to investigate medication adherence and persistence to lipid-lowering drugs (ATC C10) in patients living in the Valle d'Aosta Region with previous cardiovascular events (CVE).

Methods: Study population consists of patients with ≥1 hospitalization for or with a diagnosis of a cardiovascular disease (ICD-9 410-414, 433-437, 440). The first lipid-lowering drug dispensation was from 01/01/2018 to 31/12/2019, and the prespecified follow-up period was 3 years after index date. Cholesterol measurement data were collected, when available. Adherence to index drugs was measured as the proportion of days covered by therapy during 3 years, excluding hospitalization days, using 1 unit/die or the Defined Daily Dose as prescribed dose. Persistence to hypolipidemic therapy was evaluated using Kaplan-Meier curves.

Results: 638 naïve patients were identified (66% males, median age 65 years). Initiation of hypolipidemic therapy varied: 88% statins, 4% ezetimibe alone or combined, 0.3% PCSK9 inhibitors and 7% other lipid-lowering drugs. Non-adherent, adherent or partially adherent patients were 39%, 38%, and 22%, respectively. Only 27% of patients were persistent after 3 years (median time to discontinuation 363.5 days). LDL-cholesterol levels dropped from a median of 137 mg/dl to 80 after 6 months, but then remained stable at 2 and 3 years.

Discussion: Average adherence was generally suboptimal, while persistence to hypolipidemic therapy differed according to the index drug used.

Conclusions: After starting hypolipidemic treatment, persistent/adherent patients showed lower LDL-cholesterol levels; however, these values were above the target of <55 mg/dl for patients with previous CVE.

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Primary cardiovascular prevention in older people: sex differences in statin persistence and cholesterol control.

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Abstract

Aim: To analyse sex differences in statin persistence and cholesterol control in a Spanish elderly population initiating statin therapy for primary prevention of cardiovascular disease.

Methods: Observational longitudinal study in people over 70 years old who initiated statins for primary prevention of cardiovascular disease (2018-2020) in Aragón, Spain. By using data from the Aragón Health System, statin persistence was assessed by the maximum gap allowed method. The AdhereR package was used. Survival curves were estimated by sex and compared by the Kaplan-Meier method and log-rank test. Cox regression analyses were performed to know sociodemographic, clinical and therapy factors associated to discontinuation. The proportion of women and men with controlled LDL-c levels in different window periods was estimated.

Results: Of the 4,936 elderly people studied, 61.7% were women. They were persistent for less time than men ($p< 0.0043$). In women, none of the characteristics studied significantly explained statin discontinuation. In men, several factors were associated in the crude analysis and only the basal LDL-c level was associated after adjustment [HR 1.04 (95% CI 1.01-1.07) for every 10 mg/dl increase]. The explanatory power of the model was lower for women. Overall, 62.8% of women and 71.3% of men attained LDL-c target within six months after statin initiation, with differences by the type of statin.

Conclusions: There are differences between older women and men in statin persistence, explanatory factors for discontinuation, and degree of LDL-c target attainment. Addressing gender inequalities seems essential when discussing on the appropriateness of statin use in older people.

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Evaluation of the impact of regulatory measures that modify the prescription mode of antidiabetic drugs on the use of this drug class in adults living in the ASL TO4 (Piedmont, Italy)

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Abstract

Aim: With the introduction of the "Nota 100" on January 21, 2022, Italian general practitioners can autonomously prescribe SGLT-2 inhibitors (SGLT-2i), GLP-1 analogues (GLP-1a) and DPP-4 inhibitors (DPP-4i) to their patients. This study aimed to investigate the impact of the introduction of the "Nota 100" on the use of antidiabetic drugs (ATC A10) in adults living in the ASL TO4.

Methods: Drug dispensing data of the ASL TO4 were analyzed to measure weekly prevalence of antidiabetic drug users using the Defined Daily Dose as prescribed dose. An interrupted time-series analysis using autoregressive integrated moving average models was used to assess the use of antidiabetic drugs 19 months before and after the "Nota 100". Persistence to SGLT-2i, GLP-1a and DPP-4i was measured at 9 months for adults starting therapy with these drugs after 21/01/2022.

Results: After the introduction of the "Nota 100", a consistent increase in the use of SGLT-2i and GLP-1a was observed, accompanied by a less pronounced reduction in the use of metformin, sulfonylureas and DPP-4i. No differences were observed for the other antidiabetic drug classes. Most patients were persistent to SGLT-2i and DPP-4i at 9 months, while median time to discontinuation was 145 days for GLP-1a.

Discussion: Although the use of these drug classes is increasing, there has been no consisted reduction in the use of other classes, which continue to be used alongside them.

Conclusions: High persistence values observed compared with previous studies conducted on other antidiabetic drug classes indicate that these drugs are preferred by patients.

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Another milestone in advancing HIV management: The potential of long-acting injectable therapy to enhance medication adherence

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Abstract

Aim: Long-acting antiretroviral cabotegravir/rilpivirine combination (CAB/RPV LA) offers a new treatment for people living with HIV/AIDS (PLWHA), reducing daily pills to six intramuscular injections per year and significantly changing adherence management in clinical practice. Long-acting (LA) therapies allow real-time adherence monitoring and immediate intervention.

Methods: We included 205 PLWHA switching from oral ART to CAB/RPV LA: 174 (84.9%) males, 31 (15.1%) females; median age 52 years; 183 (89.2%) Italians; 203 (99%) HIV-RNA undetectable, 2 (1%) HIV-RNA detectable.

Data collected:
- Pre-switch adherence (pharmaceutical refill)
- LA-ART adherence (administration within ±1 week of scheduled time) in 194 (84.8%) PLWHA who received at least the third administration
- Non-persistence rates for all causes (using 100% adherence cut-off)

Results:
- Pre-switch adherence: 128 (73.6%) adherence=100%; 35 (20.1%) adherence=80-100%; 5 (2.9%) adherence=50-80%; 4 (2.3%) adherence ≤ 50%; 2 (1.1%) no data.
- LA-ART adherence: 171 (98.5%) received injections within the dosing window. 44 (25.3%) improved adherence. 172 (98.8%) maintained HIV-RNA undetectable.
- Non-persistence rates: 10 (4.8%) discontinued LA-ART: 5 (50%) toxicity, 2 (20%) personal choice, 3 (30%) virologic resistance.

Conclusions: The concept of LA-ART adherence is evolving, as PLWHA only need to attend appointments to achieve 100% adherence. In literature and clinical practice, there is ongoing debate about whether switching to LA-ART is a strategy to improve adherence or should be reserved for PLWHA already adherent. Our data suggests long-acting therapy can effectively improve adherence. Perceived quality of life improvements and maintained HIV-RNA undetectable lead to high satisfaction and persistence, despite some injection-site reactions.

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Adherence of dermato-oncological patients treated with oral antitumor therapeutics: Results of the interprofessional AMBORA care program

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Abstract

Aim: Treatment with oral antitumor therapeutics (OAT) is associated with multiple challenges (e.g. complex intake). The interprofessional care program evaluated in the randomized AMBORA trial showed significant benefits for patients treated with various OAT, but did not include OAT in dermato-oncology, which are often used in once- and twice-daily combinations. The care program was implemented in clinical routine within the AMBORA Center at our University Comprehensive Cancer Center (German Cancer Aid 70114066/70114067) including skin cancer patients. We aimed to investigate subjective and objective adherence to OAT in dermato-oncology.

Methods: For this prospective investigation, skin cancer patients treated with OAT were eligible for counseling at OAT initiation or during ongoing treatment. Adherence was analyzed using the validated MARS-D questionnaire after 4 and 12 weeks and the medication-event-monitoring-system MEMS® Button. Total Dosing Adherence (DA, proportion of days with correct OAT intake) over 12 weeks was defined as the primary outcome.

Results: Of 59 eligible patients, 52 participated in the adherence analysis (55.8% female, 78.8% melanoma combination regimens). Patients reached a median MARS-D score of 25/25 points and a median DA of 95.0% (n=48). DA to once-daily OAT was significantly higher compared to twice-daily ($p<0.05$). Six patients were categorized as nonadherent, who were younger ($p<0.001$) and more frequently employed ($p<0.05$).

Conclusions: Skin cancer patients reported a high adherence to OAT, which was confirmed by objective data. This highlights the benefit of the interprofessional AMBORA care program in dermato-oncology, which should be fostered within clinical practice and include tailored adherence counseling.

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Monitoring of medical adherence to immunosuppressive drugs by electronic healthcare data in kidney transplant recipients – a prospective study

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Abstract

Aim: Medication non-adherence is a major challenge in the management of kidney transplant recipients, leading to graft rejection. Current guidelines advocate for routine monitoring of medication adherence as a critical component of post-transplant care. Utilizing electronic healthcare data, e.g. pharmacy refill records (PRR), offers a practical, widely accessible, and cost-effective method in this setting.

Methods: The AdTorque cohort study was initiated to conduct an extensive, multimodal longitudinal evaluation of adherence to immunosuppressive medications among kidney transplant recipients. This included PRR, self-reports by questionnaires, electronic drug monitoring, psychological assessments, immunosuppressive drug levels and immune monitoring. All 226 adult kidney graft recipients transplanted at the Medical University of Vienna between 2018 and 2019 were monitored for 2 years with a clinical follow-up of 4 years.

Results: This preliminary analysis includes data on PRR presented as continuous multiple interval measures of medication availability (CMA) of 147 patients during the first post-transplant year for the immunosuppressants tacrolimus (TAC) and mycophenolic acid (MPA). By using this method during the first year we were able to assess Implementation and to a lesser degree persistence. For TAC the following CMAs were calculated: CMA1 0.86, CMA2 0.79, CMA3 0.87 and CMA 4 0.80 and for MPA: CMA1 1.28, CMA2 1.05, CMA3: 0.97 and CMA4 0.92.

Conclusions: High levels of adherence based on PRR were calculated for TAC and MPA in the first year post-transplant with higher rates for MPA. In a next step we plan on comparing these results to the patient reported BAASIS® questionnaire and patient outcomes.

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The 4-item SABA Reliance Questionnaire (SRQ-4): Identifying beliefs about SABA over-reliance for individuals not prescribed preventer therapy

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Abstract

Aim: Over-reliance on short-acting beta-agonists (SABA) and non-persistence with inhaled corticosteroids (ICS) is common in asthma. The SABA Reliance Questionnaire (SRQ) assesses beliefs driving SABA overreliance. However, SRQ item-5 (“*I prefer to rely on my reliever than my preventer inhaler”)* is not applicable to individuals on SABA monotherapy. This study aimed to examine the reliability and validity of a 4-item SRQ (removal of item-5) to assess SABA over-reliance in individuals not prescribed an ICS.

Methods: Adult participants who self-reported using SABA for asthma were recruited through a mailing database. Cronbach’s α was used to assess scale reliability. Criterion-related validity was examined through associations with self-report measures of SABA importance and use. Discriminant validity was assessed through differences SRQ scores between participants on SABA monotherapy versus SABA+ICS.

Results: Overall, 354 participants were recruited (mean[±SD] age=51.2[±15.9]). Fifty-nine (16.7%) participants were not prescribed ICS. Reliability was observed in both the ICS+SABA and SABA monotherapy populations (α=0.64vs0.69, respectively). Criterion-related validity was demonstrated through a correlation between SRQ scores and perceived reliever importance (r=0.36, p=<0.001) and higher SRQ scores in those that self-reported more SABA use (F[340,4]=5.26, p=<0.001). Participants on SABA monotherapy had higher mean(±SD) SRQ scores than participants on ICS+SABA (15.9[±2.7] vs13.4[3.0], p=<0.001), demonstrating discriminant validity.

Conclusions: The SRQ-4 performed well in individuals on SABA with or without ICS. Initial findings indicate the SRQ-4 is a pragmatic tool to identify beliefs related to SABA overreliance in individuals not prescribed an ICS.

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Promotion of electronic monitoring for medication adherence – an experience report

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Abstract

Aim: Medication adherence is crucial for achieving positive treatment outcomes. With the rise of m-health, electronic monitoring (EM) holds promise for improving adherence in real-world healthcare. However, promoting EM devices is challenging. We aimed to explore how to overcome these challenges during simulated pharmacy encounters.

Methods: We developed a 2-step adherence consultation for chronic medication use. In step 1, after screening for adherence difficulties and developing a SMART (Specific, Measurable, Achievable, Relevant, Time-bound) intervention, the pharmacist proposes EM. In step 2, the EM results are discussed 2 weeks later to consolidate the intervention. We tested the adherence consultation with five pharmacists (aged 32-68 years; work experience 5-40 years; two men) serving two patients (one male 83 years; one female 58 years) who visited the simulation pharmacy at the University of Basel, Switzerland, three times each with a recent refill prescription, playing themselves to simulate a real-world situation. The pharmacists obtained no instruction on promoting EM.

Results: Both patients trusted in their own management systems and were reluctant to use EM. Pharmacists struggled to emphasize the benefits of the EM. Patients accepted EM after the prompts "*In two weeks, we could review your medicine use and identify areas for improvement"* (man) and *"I would like to ask if we can conduct a short study to test the accuracy of your medication intake"* (woman).

Conclusions: Reframing EM devices as tools for assessing patient behavior, rather than just monitoring, can enhance patient acceptance. Mentioning the research context might reach altruistic individuals.

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Study of adherence to tyrosine kinase inhibitors in patients diagnosed with chronic myeloid leukemia: Preliminary results of a retrospective cohort

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Abstract

Introduction: Tyrosine Kinase Inhibitors (TKIs) have revolutionized the treatment of Chronic Myeloid Leukemia (CML), allowing the life expectancy of patients diagnosed with CML to match the average. However, adherence to treatment remains a challenge. In addition, many factors can interfere with the quality of life of patients with CML and may differ from the conditions of clinical trials in which the TKIs were tested.

Method: An observational retrospective cohort study is being conducted with adult CML patients at any stage of TKI treatment. Data were collected from the electronic database of Hospital das Clínicas in Ribeirão Preto, covering January 2014 to December 2023, with Ethics Committee approval (51251121.8.0000.5403). Adherence was measured using the Proportion of Days Covered (PDC) formula and the institution's clinical protocol.

Results and Discussion: Out of 66 eligible patients, 37 (56%) are male, 45 (68%) were diagnosed under 60, 22 (33%) have incomplete elementary education, 32 (48%) are married, 51 (77%) are white, and 37 (56%) have comorbidities. Preliminary analysis shows a significant difference in adherence between groups: adherent (mean 92.13%, 95% CI: 89.97-94.29) and non-adherent (mean 51.79%, 95% CI: 44.63-58.94) (Mann-Whitney Test, $U = 1064$, $Z = 6.910$, $p < 0.001$). Pearson's chi-square test for independence indicated no significant association between adherence and sociodemographic or clinical factors.

Conclusions: Although there were differences from clinical trial conditions, no individual factor significantly impacted adherence in the first 23 months of treatment. Future steps include conducting temporal analysis and exploring new variables to better understand the factors influencing adherence.

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Modifiable factors that affect adherence to tyrosine kinase inhibitor treatment in BCR::ABL1 positive and negative patients with myeloproliferative neoplasms: Preliminary results of a systematic review

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Abstract

Introduction: Tyrosine kinase inhibitors (TKIs) are frequently used to treat patients with Myeloproliferative Neoplasms (MPN). However, non-adherence to TKIs remains a challenge, resulting in worse outcomes and potential drug resistance. A comprehensive review of evidence regarding predictors of non-adherence is still lacking. This study aims to synthesize evidence on modifiable determinants of TKI adherence in various types of MPN using existing adherence behaviour frameworks and identify potentially effective intervention methods.

Method: A search was conducted across nine databases, including gray literature. Studies were included if they involved adult patients with Chronic Myeloid Leukemia, Primary Myelofibrosis, or Polycythemia Vera, treated with TKIs. Determinants were evaluated using the COM-B system (Capability, Opportunity, and Motivation) and the Theoretical Domains Framework (TDF) to understand behavioral determinants of adherence. The systematic review is registered (CRD42024512635).

Results and Discussion: From 3,904 reports, 1,713 duplicates were removed. A pilot screening of 100 articles achieved a kappa index of 0.78. After screening 2,191 titles/abstracts, 1,894 were excluded. A 93% alignment on full-text inclusion was achieved, resulting in 297 full-text articles. The included articles cover patient, healthcare professional, caregiver, and researcher perspectives on modifiable determinants of TKI adherence across the TDF and COM-B frameworks.

Conclusions: Although the review is still ongoing, it is evident that this is the first Systematic Review involving these MPN and TKIs to assess modifiable factors of adherence using behavioural frameworks. It aims to enhance the understanding of adherence determinants and to develop more effective interventions for better clinical outcomes in MPN patients.

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Medication adherence in patients with early-stage breast cancer undergoing adjuvant treatment with aromatase inhibitors with or without abemaciclib: Study protocol

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Abstract

Background: Adjuvant endocrine treatment (ET) with aromatase inhibitors (AIs) in combination with CDK4/6 inhibitor abemaciclib has recently become standard of care of high-risk hormone receptor positive HER-2 negative (HR+/HER2-) early breast cancer (BC) patients. However, the treatment is associated with adverse events (AEs) that may jeopardize treatment adherence.

Aim: We will examine medication adherence among patients undergoing adjuvant therapy with AIs, either alone or in combination with abemaciclib, and to explore the factors that impact medication adherence.

Methods: We will conduct a prospective cohort study in 300 patients diagnosed with early-stage, HR+/HER2- BC undergoing adjuvant treatment with AI and abemaciclib (100 patients) or AI alone (200 patients). Medication adherence (implementation phase) will be assessed using MARS-5 questionnaire and pill count 3 and 6 months after enrollment. Adherence will be defined as MARS-5 score of >24 and taking ≥80% of prescribed doses. Additionally, we will collect sociodemographic characteristics, data on cancer treatment and concomitant medications, AE related to AI and abemaciclib, quality of life (using EORTC QOL C30 and EORTC QOL BR-23 questionnaires), beliefs about medicines (using BMQ), and cognitive functioning (using FACT-Cog questionnaire).

Results: AEs associated with abemaciclib may potentially jeopardize medication adherence. Consequently, we anticipate that patients treated with abemaciclib and AI will exhibit lower medication adherence compared to those receiving AI alone.

Conclusions: There is a significant lack of data on medication adherence among patients with early-stage BC treated with abemaciclib. Addressing this gap is crucial for developing effective strategies to improve medication adherence, thereby improving patient outcomes.

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Identifying distinct patient phenotypes in type 2 diabetes prior to initiation of second-line therapy

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Abstract

Aim: To characterize distinct patient phenotypes among patients with type 2 diabetes (T2D) prior to initiation of second line therapy.

Methods: We conducted a retrospective cohort study using primary care data from United Kingdom. Our cohort included patients with T2D who initiated on metformin and prescribed a second line antihyperglycemic between 2013-2013. Demographics, co-mediations, comorbidities and clinical characteristics were measured in the one year prior to the initiation of second line therapy to identify patient phenotypes. The elbow method was used to identify the number of distinct patient phenotypes and K-modes clustering was used to identify the phenotype each patient belonged to.

Results: Overall, 57,795 patients were included; mean age was 60 (SD 13), 56% were males and mean HbA1c was 9% (SD2). We identified 6 unique patient phenotypes. For example, compared to the overall cohort, cluster 2 (n=4,018) had a higher proportion of males (79% vs 56%), lower mean HbA1c (8% vs 9%), higher prevalence of hypertension (73% vs 30%), microvascular complications (63% vs 21%), and prescription of cardiovascular medications (96% vs 85%). Conversely, patients in cluster 4 (n=10,586) were younger (53 years vs 60), had a lower prevalence of males (19% vs 56%) and had a higher proportion of anti-infective (73% vs 49%), nervous system (82% vs 53%) and respiratory (66% vs 36%) prescriptions.

Conclusions: T2D patients vary in their characteristics prior to initiating second-line therapy. Understanding these differences is critical for informing personalizing prescribing, which can improve treatment effectiveness, minimize side effects, and ultimately improve adherence.

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Chronic obstructive lung disease on the internet: Mental model of the disease and adherence to inhaled treatment

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Abstract

Background: Adherence to inhaled medication in COPD reduces hospitalizations, healthcare costs and increases survival. Only 57% of patients correctly report adequate persistence of treatment (according to ABC taxonomy). The absence of a defined mental model of COPD and personal beliefs influence adherence.

Aims: Explore the mental model of COPD and adherence, which patients reflect through their testimonies on the Internet, and assess their beliefs regarding inhaled medication.

Methods: Exploratory-interpretive qualitative design. Inductive methodology. Grounded Theory. Using the Atlas Ti 5.1 program. Sources: COPD related websites, patient forums and social networks. Units of analysis: videos, narratives, questions and answers, conversation threads. Saturation criteria. Constant comparative method Analysis: Textual level: quotes, initial and focused coding, families. Conceptual level: networks, meta-network, Boolean operators. Adjustment to the Common Sense Self-Regulation Model (Leventhal).

Results: Including 29 testimonies: 6 narrations, 11 videos, 10 conversation threads, 2 questions. Main utility of the Internet in COPD: support between patients. Expressed mental model: *Identity:* lack of information. *Causes:* tobacco and others: professional occupation, "poorly cured" colds. *Duration:* awareness of severity and chronicity. *Consequences:* global invasion of life. *Control/healing:* control capacity associated with an active attitude, high self-efficacy and following healthy habits. Doubts about the effectiveness of inhalers and erroneous beliefs (accustoming, false adverse effects) associated with non-compliance.

Discussion: Mental model of COPD on the Internet confused about disease identity and effects of inhaled treatment. Patients' vision influences adherence to inhalers.

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Factors associated with non-adherence to antiplatelet medications among patients with peripheral arterial disease

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Abstract

Aim: Our study was aimed at analysing non-adherence to antiplatelet treatment in patients with peripheral arterial disease (PAD) and identifying patient- and medication-related factors associated with the probability of non-adherence.

Methods: In our study cohort, 13,869 antiplatelet agent users in whom PAD was newly diagnosed during 2012 were included. Patients were followed from the index date for five years. This cohort included 8711 (62.8%) persistent patients and 5158 (37.2%) patients non-persistent with antiplatelet agents. Non-persistence was identified according to the presence of a 6-month treatment gap period without any prescription of antiplatelet medication. Implementation phase of adherence was analysed using the index Proportion of Days Covered (PDC). PDC was calculated during the whole follow-up period in persistent patients and only during the period of persistence in non-persistent patients. Patients were considered as non-adherent in the case when PDC <80%. Factors associated with the likelihood of non-adherence were identified using the binary logistic regression model.

Results: Non-adherent patients were significantly more frequently present in the group of non-persistent patients in comparison with the group of persistent patients: 1386 patients (26.9% of 5158 non-persistent patients) vs 1274 patients (14.6% of 8711 persistent patients). Administration of combination of aspirin with clopidogrel and general practitioner as index prescriber were associated with adherence among both persistent and non-persistent patients.

Conclusions: Our study revealed a higher proportion of non-adherent patients in the group of non-persistent patients which indicates an increased risk of discontinuation among patients with insufficient adherence at the level of implementation.

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A systematic review to identify interventional targets for adherence to targeted non-small cell lung cancer (NSCLC) medicines in clinical trials and real-world settings

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Abstract

Introduction: Targeted oral medicines are revolutionising the treatment of NSCLC. Optimising drug dosages may enhance effectiveness and safety of new treatments; however, the effectiveness and safety of new treatments depends on patient adherence in clinical trials and real-world settings.

Aim: To identify modifiable drivers and barriers to adherence to oral targeted medicines for NSCLC and map them to the Capability, Opportunity, Motivation-Behaviour (COM-B) model.

Methods: A systematic search of two electronic databases was conducted. Studies were included if they assessed potentially modifiable barriers to adherence (initiation, implementation, or persistence) to oral treatments among adults with NSCLC in clinical trials or real-world settings. Data were synthesised thematically.

Results: Eleven studies (total 2,289 participants) met the inclusion criteria. Three were qualitative studies exploring patients' treatment experiences and perceptions of oral targeted therapies and seven were quantitative studies assessing either treatment implementation (n=6; measured by self-report, electronic monitors or pharmacy data) or persistence (n=1; measured using pharmacy data). None of the studies assessed treatment adherence in clinical trials. Several adherence drivers and barriers explained by the COM-B model were identified.

Discussion/Conclusions: The findings provide insight into factors influencing patients' capability, motivation, and opportunity to adhere to targeted NSCLC therapies as prescribed in real-world settings. They highlight the potential value of precision dosing to address side effects alongside interventions addressing capability, opportunity and motivational barriers to implementation and persistence. Further research is needed to understand drivers and barriers to initiation, as well as patients' experience and adherence behaviours within clinical trials.

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The patient perspective of healthcare system factors that affected their adherence to oral anticancer medications for multiple myeloma: A qualitative, descriptive study

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Abstract

Aim: Costly, long-term oral anticancer medications (OAM) are increasingly becoming standard care for patients with cancer, but little is known regarding the healthcare system components that may influence adherence. The aim of this study was to explore the patient perspective of healthcare systems factors affecting OAM adherence.

Methods: This qualitative, descriptive study included in-depth, semi-structured interviews (n=17) conducted between 3/2022-3/2023 as part of a larger study of electronically monitored adherence to OAM maintenance therapy for multiple myeloma. Patients were recruited from a Comprehensive Cancer Center in Western Pennsylvania. Data were analyzed using content and thematic analyses.

Results: Most patients were male (76.5%) and non-Hispanic white or Black (70.6% and 17.6%) or Hispanic (11.8%). The average age and time on OAM therapy was 58.8 years (range: 36-80) and 16 months (implementation phase), respectively. Analyses identified three main themes of healthcare systems factors affecting adherence: unclear OAM cost and payment resources (insurance concerns, pharmacy assistance programs), cumbersome delivery affecting quality of life (signature-required home delivery), and complex and burdensome refill processes (time intensive, repetitive, siloed systems). Patients' perspectives and experiences differed by social and economic resources.

Conclusions: Findings highlight healthcare system factors that may influence OAM adherence. Clinicians and specialty pharmacies should be aware of socioeconomic, healthcare system, and policy factors that may impact adherence for home-based OAM regimens. Future research and policy work should examine these factors and how they influence OAM adherence by adherence phase to inform interventions to support patient OAM adherence.

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Improving adherence to treatment: Insights from the BEAMER Project

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Abstract

Aim: To present an overview of the BEAMER project from the academia and industry perspective, focusing on its outcomes in enhancing patient adherence to treatment through innovative and personalized digital health solutions.

Rationale: Non-adherence to treatment regimens results in significant health and economic burdens, including 200,000 premature deaths and €125 billion in avoidable costs annually in the EU. The BEAMER project seeks to address this challenge by leveraging behavioral science, patient segmentation, and personalized care, aiming to improve health outcomes and system efficiency.

Summary: During this roundtable, four different stakeholders will share their perspective about adherence to treatment under the umbrella of the BEAMER project. The discussion will focus on the conceptualization and development the disease-agnostic model for predicting and improving adherence behavior. Additionally, the roundtable will address critical aspects of regulation, ethics, and data management. Emphasizing the importance of sustainability, the conversation will explore how sustainable practices can enhance the long-term success and impact of adherence models. The integration of robust regulatory frameworks will ensure ethical standards are upheld while leveraging data responsibly to drive better health outcomes.

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Implementation of medication adherence interventions by pharmacy-driven living labs in the Netherlands: a mixed method study using the RE-AIM framework

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Abstract

Aim: Four pharmacy-driven living labs implemented consultation-based medication adherence interventions in routine care, guided by the Medication Adherence Knowledge and Expertise and Implementation Taskforce (Make-It consortium). This study evaluated the actual implementation of these interventions.

Methods: A mixed-method approach was used. Semi-structured interviews with six project leaders from four living labs were held. Documentation generated by the living labs and Make-It (e.g. reports, minutes, logbooks) was screened. Relevant data were extracted. The Reach Effectiveness Adoption Implementation Maintenance (RE-AIM) framework was used to guide data collection, data extraction and analyses.

Results: Three living labs reached the anticipated patient numbers. Reach in the fourth living lab was hindered by suboptimal communication with patients about the intervention goal. All anticipated pharmacy staff members adopted the interventions. Having a highly motivated project leader accelerated adoption, together with appropriate staff training. Pharmacy staff and patients appreciated the interventions, and it strengthened their contact. Fidelity was high in all living labs. Implementation was facilitated by interventions being compatible, good leadership, intrinsic motivation of staff, and by short-cycle evaluations before scaling up. Significant effects on adherence (implementation phase) were found in only one living lab, whilst other patient-reported outcomes did improve. In most living labs, the interventions were not sustained due to limited staff capacity and finances.

Conclusions: This living lab-based study showed that implementation of medication adherence interventions in routine care is feasible but requires an investment to create support amongst all involved. Implementation leadership is crucial. For sustainability, adequate resources and continued attention for the intervention is required.

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Adherence and virtual reality

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Abstract

Virtual reality (VR) might be used to increase adherence to medication. The aim of the paper was to make a literature review on the use of VR to increase adherence to drug therapy. Clinical studies proved the benefit of VR in analgesia, anxiety, psychiatric diseases and neurological diseases. The use of VR increases the satisfaction of patient and determines him to become more actively involved in the treatment of his disease. VR might be an important tool to increase adherence to medication in special populations.

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Commercial smartphone apps for asthma self-management: A content analysis and user testing study

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Abstract

Background: In Europe, almost 10 million people under the age of 45 have asthma. Poor asthma self-management and adherence to medication are very common. Increasingly, mobile phone apps are used to target adherence behaviours in people with asthma and can be used to initiate, implement and persist with medication adherence. This study aims to identify, describe, and evaluate apps that aim to support self-management in people with asthma. It will serve as a pilot study to develop a methodology to screen similar apps for other chronic conditions. Therefore, only a subset of apps will be reviewed and evaluated.

Methods: Apps were searched in the UK Google Play Store and Apple App Store. The systematic search yielded 78 apps to review according to Mobile Application Rating Scale (MARS), Behaviour Change Techniques (BCTs) and gamification elements and functions. We randomly chose 11 apps to review. Two apps were chosen to perform useability testing using a think-aloud protocol with six participants.

Discussion: By the end of this study, we will have a consolidated coding framework and think-aloud protocol ready to use in similar studies. Eleven apps were reviewed using the framework described above. Common BCTs were feedback, monitoring and shaping knowledge. The next step is to consolidate the results and framework by randomly choosing four for an independent second review. For the think-aloud protocol, three participants out of the six have been interviewed so far. This study demonstrates how important health psychology is to digital health applications to evaluate the quality and usability of self-management apps.

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Development and validation of C-MABQ15, a new self-report tool for diagnosing adherence determinants in people with bipolar disorder (BD)

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Abstract

Background: Approximately 40% of patients with bipolar disorder (BD) are nonadherent. Current adherence support is not tailored to individuals' determinants and thus marginally effective. Underpinned by Theoretical Domains Framework (TDF), four empirical studies have been completed; a systematic review identified adherence determinants, these were prioritised in a qualitative study, items were generated and cognitive interviews undertaken producing prototype 50-item '**C**ollaborative **M**edication **A**dherence in **B**ipolar disorder **Q**uestionnaire' (C-MABQ) [implementation and persistence phase]. This study aimed to evaluate C-MABQ's psychometric properties.

Methods: Adult patients prescribed lithium for BD responded to cross-sectional C-MABQ survey, a sub-sample responded twice to assess test-retest reliability. Mokken scale analysis was performed to select unidimensional, homogenous, locally independent, monotonous and non-intersecting items. Criterion validity was evaluated against Medication Adherence Report Scale (MARS-5) and lithium levels. Model fit was analysed using confirmatory factor analysis. Internal consistency was measured using Cronbach's alpha.

Results: 325 patients completed C-MABQ. Fifteen items, C-MABQ15, representing six TDF domains, 'Emotion', 'Social Influence', 'Memory, attention and decision processes', 'Intentions', 'Goal', 'Social/professional role and identity', fulfilled Mokken scale criteria and demonstrated construct validity. C-MABQ15 showed criterion validity with MARS-5 (ρ=0.32, P<0.001) but not with lithium level. C-MABQ15 had good model fit (CFI=0.997, TLI=0.996, RMSEA=0.059), internal consistency (α =0.91, 95%CI=0.89 to 0.93) and test-retest reliability (ICC=0.74, 95%CI=0.61 to 0.82, P<0.001).

Conclusions: C-MABQ15 diagnoses individuals' adherence determinants. Through its mapping to TDF, relevant behaviour change techniques (BCTs) may be identified for each item. Relevant BCTs deemed feasible and acceptable need to be selected followed by feasibility testing.

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Non-adherence to treatment: “Global challenges, tangible solutions” Proceedings of the 2nd edition of the a:care Congress.

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Abstract

Background: Non-adherence to treatment is a significant global healthcare issue, both in high- and low-income countries. Healthcare professionals still underestimate the extent of this public health problem and are largely unaware of the figures and causes of non-adherence to therapy.

Methods: In 2021, the first edition of the a:care Congress was the first global congress on medication adherence and behavioral science dedicated to Health Care Providers (HCPs). In the 2nd edition (October 2022), particular attention was given to understanding region-specific causes of non-adherence. The objective of the congress was to raise awareness and provide practical tools to HCPs to better address non-adherence in their practice.

Results: The 2022 congress raised the interest of more than 65,000 HCPs worldwide and was endorsed by 65 medical societies across the world. A self-administered survey in 2021 and its follow-up in 2022 demonstrated a strong improvement in identifying and addressing non-adherence in the practice of HCPs who had attended the first edition compared to first-time attendees.

Conclusions: This eager engagement may reflect the significant attraction of HCPs towards transferable skills concerning the under-addressed topic of behavioural sciences applied to improve treatment adherence and demonstrates the powerful potential of large-scale educational programs to raise awareness towards treatment non-adherence.

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Factors influencing medication adherence in patients with cancer treated at diverse settings: a qualitative study

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Abstract

Aim: Oral anticancer agents (OAAs) are now common in the treatment of many cancer types; however, non-adherence to OAAs presents a significant challenge. We identified factors impacting adherence in academic and non-academic settings.

Methods: We conducted semi-structured interviews among adult patients treated at UNC Health's academic medical center and affiliated non-academic facilities who were prescribed OAAs continuously for at least 6 months. Guided by Social Cognitive Theory, interview questions explored factors influencing medication adherence (implementation and persistence). We considered interview data holistically and used template analysis.

Results: 36 participants completed interviews: 61% female, 47% older adult, 67% non-academic facility, and 64% had hematologic malignancies. During the implementation phase, participants reported routinizing their OAA was not difficult; however, side effects, high cost, and refill disruptions were common barriers. Adherence facilitators included: patient-initiated reminder systems, caregivers, responsive clinical teams, and confidence in treatment benefits. At the persistence phase, participants noted that physician instructions and treatment completion would be their reason to discontinue while others noted they might consider stopping if they lose confidence in their treatment or physician.

Conclusions: Across diverse clinics and participants, we found environmental (i.e. system and treatment-related) barriers were more commonly described instead of cognitive and behavioral (i.e. patient-level) ones. Patient-identified facilitators can be leveraged to create an adherence intervention bundle for oral anticancer agents (OAAs). This bundle could be delivered equitably across various healthcare settings to address non-adherence factors and improve OAA outcomes.

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Medication and related treatment adherence in complex conditions: A behavioral model

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Abstract

Behavioral psychologists have long been interested in adherence, and behaviorally-based models of adherence have been advanced in the literature, but connection with audiences specifically concerned with adherence to medications has been limited. Behavioral models are applicable across medication, therapeutic, and lifestyle change treatments, which is particularly relevant in complex conditions such as autism spectrum disorder and other neurodevelopmental disorders. Treatment is multifaceted, and optimal adherence (often by caregivers / mediators of treatment) requires skill and attention to a range of interventions. Societal burdens related to medication and other treatment nonadherence in complex conditions (cost of care, unremitting illness) are overwhelming. This presentation will describe the author's published behavioral model of adherence, contextualized in the treatment of autism spectrum disorder and other neurodevelopmental disorders. Particular attention will be given to the factors involved in the initiation and implementation of treatment, as well as the persistence required of individuals and their caregivers who face extremely long time horizons for the management of adherence to medications and other facets of treatment.

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Comparing self-reported endocrine therapy adherence and pharmacy refill adherence among women with stage I-III breast cancer

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Abstract

Aim: To compare the Viols self-report measure of endocrine therapy (ET) adherence and pharmacy refill adherence in women with stage I-III breast cancer and to investigate independent predictors associated with both measures.

Methods: A cross-sectional study of women with stage I-III breast cancer (N=306), from the National Cancer Registry Ireland, with self-reported adherence (Viols extent of non-adherence scale) and General Medical Services scheme's pharmacy refill data was conducted. Higher Viols scores indicate non-adherence. Pharmacy refill claims for the 6 months prior to Viols completion was used to calculate: (i) the average proportion of days covered (PDC) and; (ii) a PDC<80% (non-adherent). The relationship between the Viols and PDC measures were examined using Spearman correlation and Wilcoxon–Mann–Whitney test. Associations between sociodemographic and the Beliefs about Medicine Questionnaire (BMQ) predictors and both measures was assessed using multivariable linear regression.

Results: The median Viols score was 1 (IQR 1,2). The median PDC was 0.96 (IQR 0.87,0.99) with 36 (11.8%) participants classified as non-adherent (PDC<0.80). There was a weak negative correlation between the Viols and PDC (r=-0.23, p<0.01). Participants classified as non-adherent (PDC<80%) had a significantly higher median Viols score (1.7 (IQR 1,4) vs. 1 (IQR 1,2); p<0.01). Sociodemographic predictors were not associated with either measure. Belief in ET necessity (β=-0.3, SE=0.01, p<0.05) and higher concerns about ET (β=0.05, SE=0.02, p<0.01) were associated with higher and lower Viols adherence respectively.

Conclusions: Participants with ≤80% pharmacy refills self-reported higher levels of non-adherence. ET beliefs are associated with self-reported adherence but not pharmacy refills.

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Detecting stigma as a factor affecting patients' decision to participate in clinical trials

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Abstract

Introduction: Stigma has been shown to have many negative effects on patients. It is associated with decreased quality of life in both physical and mental health domains, as well as more pronounced symptoms of self-devaluing, anxiety and depression. Furthermore, Stigma is a recognized barrier for patient adherence to prescribed therapies and fear of stigma is a reason to reject the inclusion in clinical trials. Nevertheless, tools for early detection of stigma in clinical trials eligible patients are limited.

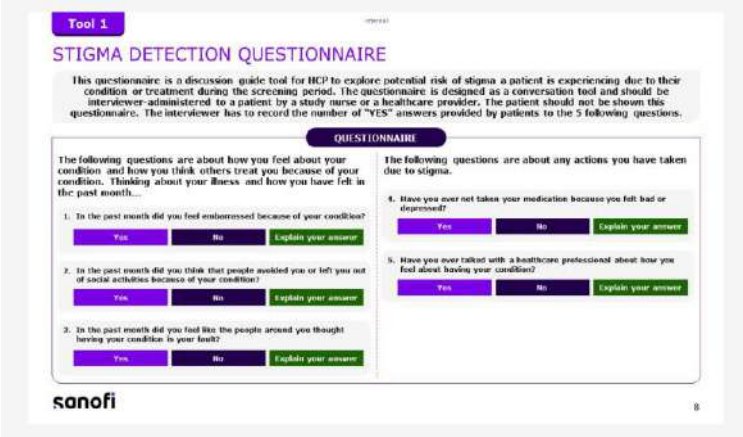
Objective: The purpose of this study is to develop a stigma screening questionnaire tool to identify clinical trials eligible patients at risk of stigma.

Methods: A literature search was conducted using the PubMed and Embase databases. The articles were included in the analysis if the study provided an adequate description of the items and domains measured by the validated scale. The full articles were then reviewed to map the key domains measured. A Behavioural Science expert support was leveraged to identify the most relevant domains to be included in the Stigma detection questionnaire (named "TOOL 1") and to develop the text of the questions.

Results: The research query was launched on PubMed and Embase medical databases, retrieving 292 and 311 results respectively. After the review of Title and Abstracts of the resulting publications, 13 different scales were identified as validated instruments to measure stigma across different pathologies. The analysis of these scales allowed to identify the most relevant domains assessed, reported in Table 1. With the support of a Behavioural Sciences expert, the analysis of most frequent mentioned domains was performed. **The Social Exclusion, Shame from others, Disclosure Concerns** and Self-esteem impact were identified as the most relevant aspects to explore for early detection, so 1 question was developed for each of them (Figure 1) with an interpretation guidance (Figure 2).

Discussion: The reported findings were used to refine the initial version (named "TOOL 1") of the stigma risk assessment questionnaire for patients eligible for recruitment in dermatology clinical trials. The TOOL 1 was included together with a previously available drug adherence evaluation questionnaire (named "TOOL 2")* in a module (named "Stigma Module") prepared for clinical trial sites HCP Staff to assess stigma risk in patients potentially eligible for clinical trials. This version is shared in preparation for a second study, scheduled for Q1-2025, aimed at obtaining direct patient feedback on the tool.

Conclusions: The TOOL 1 Stigma detection questionnaire is a newly developed 2 scales, 5 questions screening tool to assess the stigma risk in patients eligible for clinical trials**.**



*TOOL 2**

Weinman J, Ali I, Hodgkinson A, Canfield M, Jackson C. Pilot Testing Of A Brief Pre-Consultation Screener For Improving The Identification And Discussion Of Medication Adherence In Routine Consultations. Patient Prefer Adherence. 2019 Nov 5;13:1895-1898. doi: 10.2147/PPA.S219860. PMID: 31806938; PMCID: PMC6842708.

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Medication adherence in psoriatic patients on conventional medications: Identification of the high-risk groups - Study protocol.

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Abstract

Background: The first line of systemic treatment of psoriasis are classical drugs, which includes methotrexate, cyclosporine and oral retinoids. If classical treatment is ineffective, patients may be qualified for biologic treatment, characterized by high efficacy and a significantly higher cost.

Aim: The aim of this study is to assess what proportion of patients may be qualified for biologic treatment on the basis of apparent failure of classical treatment, caused in fact by low adherence to medication. Additionally, we aim to identify high-risk groups for non-adherence, and thus provide a basis for developing adequate interventions in the future.

Methods: This is a single-center observational study. Patients over 18 years old being treated for psoriasis will be recruited from the health care system. The study has been divided into a retrospective part (patients already undergoing biologic treatment) and a prospective part (patients treated with classical methods who could potentially qualify for biological treatment in the future). In both groups, patients will be subjected to an extensive questionnaire survey, including questions about psychological aspects, demographics, patient attitudes toward treatment, adverse effects, and social and economic factors. The information obtained will be cross-referenced with information on stated adherence in the search for correlations and identification of risk groups.

Results: Data collection will start as soon as the ethical approval for the study is obtained.

Discussion: The study may not only help to increase adherence among psoriatic patients, but also reduce treatment costs by reducing the number of patients unnecessarily switched to costly biological treatment.

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THE importance of the patients' attitude and adherence in prevention programs in general practice

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Abstract

Introduction: Health care providers play a crucial role in the prevention of chronic diseases, such as prevention projects in general practices.

Aim: The aim of the research was to support the introduction of a prevention project by exploring the patients' lifestyle characteristics, medication adherence and attitudes to prevention activities that influence the prevalence of chronic diseases.

Method: A quantitative survey was conducted with a self-administered online questionnaire. The target population was patients aged 40-60 years registered in a general practice in Budapest. The questionnaire consisted of 4 groups of questions, including medication habits, lifestyle habits and issues related to prevention and adherence.

Results: 136 patients were included in the study, registered in the regular digital database of the general practice. A significant association was found between the increase in body mass index and the perception of fitness and chronic disease. The most important factors affecting adherence were the obesity, the number of medicines taken per day and the education level of respondents. 94% of the respondents considered the prevention as important, but only 45% indicated that they would participate in the planned programme at their GP practice in the coming months.

Conclusions: Our results highlight the importance of the quality of relationship between the GPs and patients: a good relationship, established in a personal and digital way, supports the monitoring of patients and influences their participation in prevention and screening programs. We will follow up the results of the planned project and describe the outcomes of this communication.

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The evolution of counseling and e-health communication: Strengths and weaknesses in monitoring therapeutic adherence

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Abstract

Introduction: The COVID-19 pandemic has generated hyperbolic enhancement of digital technologies to remote patient monitoring. Italian legislation updated national guidelines on telemedicine and allocated European funds for care digitization and territorialization. The appropriate and aware management of remote communication techniques is crucial. Our aim is to analyze strengths and weaknesses of digital communication and to develop operational protocols.

Methods: We analysed communicative aspects of digital professional-patient relationship to develop a SWOT analysis using a survey proposed to HCP (clinicians and hospital pharmacists) monitoring patients after discharge from outpatient clinic or hospitalization.

Results:
Strengths: maintenance of patient engagement and therapeutic alliance; planned communication intervention; adherence support in persistence phase and to prevent discontinuation;
Weaknesses: Patient selection needed; strongly planned communication doesn't allow to explore intervening problems; not applicable with new patients or issues; difficulties in case of reduced technology literacy; variability of HCP learning curve; operational protocols for interview standardization and algorithms for the appropriate identification of patients, timing and remotely monitorable issues are needed.
Opportunities: prompt and adequate response to the emerging needs of patients and health-system; digital empowerment of the population.
Threats: inadequate funding and training on counseling skills; need to standardize digital technologies.

Discussion: Remote communication is a rapidly expanding tool with essential advantages in the current healthcare scenario. it still represents a challenge that requires funding and training to be used in conditions of clinical and organizational appropriateness.

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Evaluation of the implementation of medication adherence interventions in type 2 diabetes mellitus patients in Aruba and Curaçao: a mixed method study

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Abstract

Background: Many patients with Type 2 diabetes mellitus (T2DM) in Aruba and Curaçao do not adhere to their medication leading to a high prevalence of disease-related complications and increased health care costs. To enhance medication adherence, T2DM patients treated with oral antidiabetics received animated medication information followed by proactive telephone counseling from their community pharmacist. This study aimed to evaluate the implementation of these evidence-based interventions and to identify influencing factors.

Method: A mixed-method approach was used to evaluate the implementation of these interventions in 12 community pharmacies in Aruba and Curaçao. Both quantitative and qualitative data were collected through semi-structured individual interviews and reflection meetings with the participating pharmacies during and after the 11-month intervention period. For the analysis, the RE-AIM framework domains, Reach, Adoption and Implementation as well as CFIR constructs were used.

Results: With a dropout rate of 83% of the participating pharmacies, the attrition rate was low. Preliminary analysis showed that a total of 300 patients received the intervention. Success factors for the implementation included the perceived need for useful information provision and patient counseling (*tension for change*) as well as gratitude expressed by patients *(external incentives)*. Conversely, barriers to implementation included short staffing *(available resources)*, digital shortcomings *(intervention characteristics)* and difficulties with behavioral change among personnel *(the implementation climate)*.

Conclusions: The performance of interventions to enhance medication adherence in daily pharmacy practice was feasible. Pharmacies were engaged adopters of these interventions. However, to sustain and upscale these interventions the barriers identified should be addressed.

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The relationship of adherence measures among different diseases

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Abstract

Aim: We aim to examine the relationship between adherence rates of patients with diabetes and hypertension to determine whether knowledge of adherence to one medication is predictive of the other.

Methods: We examined the relationship of electronically monitored adherence rates in a group of patients taking medication for both diabetes and hypertension participating in a study on comorbid conditions. Simple linear regression analyses were conducted to determine if diabetes adherence rates were predictive of hypertension adherence rates. Additionally, adherence rates were categorized into three groups (low=<50%; moderate 50-80%; and good>80%) and agreement assessed with kappa statistics. Six months post-baseline adherence was examined using three different operational definitions.

Results: Diabetes medication adherence significantly predicted hypertension adherence, though results varied by operational definition. The daily adherence model performed better (R^2=0.75) than timing (R^2=0.50) and both performed better than pill count (R^2=0.11). Similarly, daily adherence resulted in the largest kappa (k=0.544), followed by timing (k=0.399), and then pill count (k=0.131).

Discussion: Results demonstrated that adherence to one medication was predictive of adherence to a second medication. Predictive ability and reproducibility varied by operational definition with pill counts demonstrating the weakest relationship.

Conclusions: In patients taking multiple medications to treat different comorbid conditions, adherence to one may be predictive of adherence to another. However, the relationship may not be fully understood without the context of the operation definition of adherence. When tailoring behavioral interventions to increase medication in patients with multiple comorbid conditions it is important to account for the operational definition of adherence.

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Enabling medication adherence in the elderly: a systematic review of interventions in different healthcare settings

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Abstract

Aim: Non-adherence to prescribed medications is a significant public health issue. However, specific interventions to improve adherence remain poorly defined. The ElderCare project aims to tackle this issue by mapping current approaches and strategies to improve medication adherence among the elderly in various healthcare settings.

Methods: We systematically reviewed published literature in MEDLINE, EMBASE, and Web of Science up to 31.12.2023. We selected studies that evaluated the effectiveness of interventions to improve medication adherence, with a particular focus on older patients.

Results: Fifty-nine studies met inclusion criteria specifically focusing on older patients, according to the definition of each study. Forty-four were randomized or non-randomized controlled trials, twelve pre-post studies, and three non-controlled observational studies. The majority were conducted in Europe and in North America (twenty-one and twenty-two studies, respectively). The interventions mostly targeted patients with a specific chronic disease, with only four studies focusing on individuals with multimorbidity/polypharmacy to improve overall adherence. They included a wide range of approaches, such as phone reminders, educational sessions or material for patients, and, more recently, digital strategies using apps or electronic reminder devices. The interventions were mostly delivered directly to the patient; sometimes they involved pharmacists, nurses, and occasionally physicians as intermediaries, but rarely a multidisciplinary team. Almost all interventions showed a positive impact on adherence, albeit of modest magnitude and evaluated in the short term.

Conclusions: Interventions to improve medication adherence in the elderly varied widely. Each care setting has unique needs, and tailored strategies should be developed considering available resources.

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Polypharmacy management in chronic conditions: A systematic literature review of Italian interventions

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Abstract

Introduction: Potentially Inappropriate Polypharmacy (PIP) is a major leading elements for adverse drug reactions, reduced medication adherence, increased healthcare-costs, and worsen patient's condition. This study aims to identify interventions apt to manage polypharmacy in Italy.

Methods: A systematic literature review (PROSPERO: CRD42023457049) was conducted following PRISMA guidelines. PubMed, Embase, ProQuest and WebOfScience were queried without temporal constraints, encompassing all published papers until October 2023. Inclusion criteria followed the PICO model: patients with polypharmacy; interventions to monitor/manage polypharmacy versus no/any intervention; outcomes related to intervention effectiveness and cost variation. Studies quality was assessed using the STROBE Statement checklist for observational studies and CASP checklist for experimental studies.

Results: After duplicates' deletion, 153 publications were identified. Following abstracts and full-text screenings, 9 articles met the inclusion criteria. Of these, 78% were observational studies, 11% experimental studies, 11% two-phases study, conducted from 2013 to 2021. All studies were of good quality. The geographical distribution was skewed toward northern and central Italy, with 55% from Northern regions, 33% covering the entire country, and 11% including both Northern and Central Italy. Indeed, 55% Northern-regions, 33% considered the entire Italian territory, and 11% (n=1) assessed centres across Northern and Central Italy. Moreover, 44% of the studies involved patients aged ≥65years, 56% were disease specific. Monitoring interventions were the most common (67%; n=6). Outcomes focused on levels of polypharmacy (29%), comorbidities (29%), effectiveness-rates (14%), avoidable-costs (9%).

Conclusions: This review outlines that Italy lacks interventions to monitor/manage PIP, highlighting the unmet-need for patient-tailored strategies contributing to reduce health-systems' burden.

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Medication adherence interventions across Europe

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Abstract

Aim: Medication non-adherence poses a significant challenge in healthcare, necessitating effective interventions to improve patient outcomes. The effects of strategies in the actual implementation of medication adherence (MA) interventions in Europe are unknown. This study aims to address this gap by investigating MA interventions across European countries.

Methods: This cross-sectional study was conducted within the COST Action "European Network to Advance Best practices & technoLogy on medication adherencE" (ENABLE) CA19132, by Working Group 1. The online survey was administered to MA experts from 39 European countries within the ENABLE network. The survey collected data on MA interventions. Descriptive analyses and stratification by European regions were performed to identify geographical differences and trends. An analysis of variance (ANOVA) test was employed to assess variations in MA interventions among European regions.

Results: Overall, 140 MA experts from 35 countries participated in the survey. Communication and education (83.6%) emerged as the most prevalent interventions, followed by closer follow-up (53.6%), technological solutions (32.1%), and collaborative approaches (30.0%). Regional variations were observed with respondents from Eastern Europe reporting more frequently that there were no methods available for improving MA. Direct patient communication (35.0%) was identified as the most applied intervention overall, highlighting the importance of personalized interactions in promoting MA.

Conclusions: This study provides insights into the implementation of MA interventions across Europe addressing MA experts' perspectives from diverse health care sectors. Findings underscore the need for increased.

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Validation of a new Treatment Adherence Risk Assessment (TARA) measure

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Abstract

Introduction: The Perceptions and Practicalities Approach (PaPA) proposes adherence interventions will be more effective if tailored to perceptions and practicalities that underpin an individual's motivation and ability to adhere.

Aim: To validate the TARA, an adherence activation measure that operationalises the PaPA. TARA assesses patients' risk of non-adherence and identifies reasons for this.

Methods: We collated data across two completed studies where respondents with a range of chronic conditions were recruited from hospital clinics, a healthcare consumer panel and an online recruitment portal. We focussed on data from two validated questionnaires that assessed perceptual and practical barriers to adherence, the BMQ and MPRAQ, alongside the validated adherence measure MARS-5. A bespoke algorithm converted scores on the survey and segmented patients into 4 levels of adherence activation based on beliefs and practical barriers to adherence.

Results: Data from 789 respondents from the Netherlands and Turkey were analysed. 26 patients were categorised as Treatment Activation Level 1 (39% adherent), 428 at Level 2 (59% adherent), 248 at Level 3 (71% adherent) and 87 at Level 4 (93% adherent). When controlling for age, gender and education level, those at Level 1 had 19 times higher odds of non-adherence compared to those at Level 4 (OR=19.29, 95% CI=8.11-79.00), and those at Level 2 and 3 had 9- and 5-times higher odds of non-adherence.

Conclusions: The TARA can segment patients into levels of adherence activation. This insight can be used to triage patients and tailor interventions accordingly.

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Are digital health interventions effective at improving medication adherence in paediatric asthma patients? A mixed-methods systematic review and narrative synthesis

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Abstract

Aim: Medication adherence in children living with asthma is suboptimal and is linked to negative health outcomes. Digital health interventions (DHIs) have been proven effective at improving medication adherence in other conditions. This mixed-methods systematic review aimed to investigate the effectiveness and user experiences of DHIs for improving medication adherence and quality of life (QoL) in paediatric asthma patients.

Methods: Seven databases were searched in May 2022 to identify interventional studies using DHIs to target children or their caregivers to improve adherence (initiation, implementation, persistence) to asthma medication (primary outcome). Secondary outcomes were QoL and user experiences. Quantitative and qualitative data was extracted and narratively synthesised. Intervention components were mapped onto two theories of behaviour change - Theoretical Domains Framework and the Capability, Opportunity, Motivation, model of Behaviour to support intervention design.

Results: 15 studies were included. All studies demonstrated trends towards improvements in medication adherence (implementation), but only some studies (N = 9) statistically validated this trend. One study reported a significant improvement in QoL. Components that were most positively appraised by users were reminders, education, and user-monitoring, which targeted the domains of memory, attention, & decision processes, knowledge, and behavioural regulation. Users did not consistently engage with the DHI and experienced technical issues.

Conclusions: DHIs have the potential to enhance medication adherence in paediatric asthma populations. DHIs designers in public health and pharma-sponsored contexts need to consider engagement and useability, incorporating features that are valued by users. Higher quality longitudinal studies are needed to strengthen the evidence base.

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Adherence to one combination vs multiple separate topical acne products

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Abstract

Background: Acne often requires multiple medications, but adherence to one acne medication is poor and to multiple products is worse. A combination topical product reduces treatment complexity and may improve adherence.

Objective: To compare dosing frequency and quantity of topical acne product used among patients using a single combination product versus two or three separate products with the same active agents.

Methods: Patients age ≥12 years from the clinic were randomized to receive topical adapalene, benzoyl peroxide (BP), and clindamycin as one, two or three products with instructions to apply 1 fingertip unit (FTU, 0.6 grams) once daily. Dosing and quantity implementation were assessed with electronic monitor devices (EMD) (Sensal Health, North Carolina). Adherence measurement was not disclosed.

Phases of Adherence: Patients are prescribed a new regimen (initiation). Through EMD, we can detect the time and quantity of each dosage, and thereby assess adherence from enrolment through 12 weeks (implementation and persistence).

Results: All subjects initiated the treatment, while implementation varied greatly (both monitored by EDM). Patients in Arm 1 treatment had an average adherence of 71% while patients in Arm 2 treatment had an average adherence of 54%. Arm 1 patients had an average FTU 0.84, while Arm 2 average was 0.43. No Arm 3 patients have completed the protocol.

Discussion: Adherence to topical treatment is variable and often poor. As our current cohort completes the study and enrolment continues to our goal of 72 participants, we expect to better define how the complexity of treatment affects adherence outcomes.

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Habit strength and medication adherence in chronic kidney disease

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Abstract

Background: Chronic kidney disease (CKD) affects millions globally, and nonadherence to blood pressure medications worsens the condition. Research shows greater habit strength improves medication adherence (MA), but this has not been longitudinally studied in CKD patients.

Aims: In individuals with CKD, describe habit strength among those with high (≥85%), moderate (71%-84%), and low (≤70%) MA and determine if habit strength significantly differs among these medication levels. Multivariable and univariate models of demographic predictors will be examined to identify correlates of habit strength.

Methods: Medication implementation was electronically monitored for 8 weeks, using the MEMS® Cap (AARDEX Group, Belgium) to evaluate anti-hypertensive medication adherence in CKD patients. Habit strength was calculated from the MEMS® data as an objective measure of individual level variance in pill timing.

Results: Mean age was 62.75 (11.83) with 46 males (49.46%; N=93). Medication adherence was significantly correlated with habit strength, r (85) = .70, $p < .0001$. The Kruskal-Wallis test for adherence levels was significant x^2= ([2], N=86, p<.0001) 46.15. Race (p=0.0019), marital status (p=0.0321), and MA (p<0.0001) were significant predictors of habit strength in univariate models. In the multivariable model, MA was the only significant predictor (p<.0001).

Discussion: For those with CKD, MA and habit strength were positively correlated. Significant differences exist between the low, moderate, and high adherence groups, with higher adherence linked to greater habit strength. Race, marital status, and MAS strongly predict habit strength. This is the first study that correlates medication adherence and habit strength in CKD patients using objective measures.

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Medication adherence tools in Italy: Healthcare professionals' perspectives on utilization, barriers, and future adoption

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Abstract

Introduction: Medication adherence (MA) is a global health concern. Despite numerous tools to improve patient MA, their exploitation in clinical practice remains challenging. This study assessed healthcare professionals' knowledge and propensity to recommend MA tools and identified adoption barriers.

Methods: From October to December 2023, an expert-validated questionnaire on MA tools was distributed to physicians, pharmacists, and nurses in hospitals and clinics in the Emilia-Romagna region of Italy. The survey included open-ended and Likert scale questions. Data were analyzed using descriptive statistics and Chi-square or Fisher's exact tests. Qualitative content analysis was performed on open-ended responses.

Results: Out of 657 respondents, 67% were women, 54% were aged 40-60 years, 28% under 40, and 17% over 60. Participants included pharmacists (35%), nurses (26%), family physicians (22%), and geriatricians (5%), with 12% in other professions. Over the past year, traditional pillboxes (60%), patient diaries (42%), and mobile applications (15%) were the most frequently used tools, with variations observed across professions. Only 52%, 34%, and 20% of users considered pillboxes, diaries, and mobile apps, respectively, as beneficial for their patients. For future recommendations, 68% would endorse pillboxes, 57% diaries, and 40% mobile apps. Main barriers included poor pillbox usability (35%), lack of patient motivation for diaries (23%), and low digital literacy for apps (67%).

Conclusions: Traditional pillboxes remain the most used MA tools, but digital tools show future potential if digital literacy improves. The study emphasizes the need for targeted strategies to enhance MA tool adoption in clinical practice.

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Starting with the end in mind: Application of implementation science methods to enhance the effectiveness of interventions to address adherence in pharma-sponsored patient support programmes

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Abstract

Aim: The primary aim of Pharma-sponsored patient support programmes (PSPs) is often to enhance treatment adherence (initiation, implementation, persistence). PSPs can be considered 'complex interventions', due to multiple interacting components and stakeholders. There is industry recognition that Implementation Science (IS) methodologies can bring a scientific lens to enhance PSP execution. Our objective was to evaluate barriers to implementation of PSPs supporting adherence, with explicit consideration of IS to guide enhancement.

Methods: An inductive and deductive qualitative approach was used to explore perceptions of internal stakeholders experienced in the running of European PSPs. Seven 1:1 semi-structured interviews and 1 focus group were conducted. A topic guide informed by the Theoretical Domains Framework was used to explore different components of intervention implementation.

Results: There was consensus that proactive understanding of the barriers to PSP delivery is critical, with formal, systematic approaches perceived as beneficial. Key themes included: Detailed consideration of local context and inclusion of stakeholders early in the design process; provision of guidance to support programme flexibility, whilst maintaining fidelity; and the importance of collecting experiences of service delivery staff to inform programme evolution. Key enhancement strategies included formal use of IS frameworks to aid characterisation of barriers, with proactive knowledge sharing and training amongst programme development and implementation stakeholders.

Conclusions: The implementation of PSPs to support treatment adherence can encounter many practical and motivational barriers. Systematic application of IS methods early in design, enables implementation barriers to be defined and addressed, optimising PSP impact and enhancing patient outcomes.

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Advancing medication adherence in India: Validating *MedpeR®- your personal Medicinal helpeR*, a novel assistive technology focused on the elderly - A multicenter randomized controlled trial

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Abstract

Aim: To validate MedpeR®, a novel assistive device*(supported by Govt-of-India)*, for improving medication adherence among the Indian urban elderly population.

Objective: To compare treatment adherence rates among device-assisted persons with those in routine practice.

Methods: A local Ethics-Committee-approved 6-month randomized, 2-arm, controlled trial(n=30), with subjects aged 65+ with polypharmacy and comorbidities, was done. In the experimental arm, 15 elderly chronic stable patients used MedpeR®, a Smart Pillbox enabling anxiety and error-free timely medication consumption, without requiring Wi-Fi or a Smartphone, post setup, after due sensitization. The control-arm had patients continuing the consumption of medication following the routine practice. The initial 2 months were the baseline and the next 4 months involved the use of MedpeR®. Adherence data from MMAS and self-reporting techniques *(with vernacular translation when required)* and ethical digital medication data from MedpeR® were also analysed.

Results: We recorded a significant improvement in adherence rates in the device group. Improved health outcomes and reduced anxiety related to medication errors were observed.

Discussion: This study has significant implications for improving medication adherence practices. MedpeR® has unique Internet-of-Things connectivity benefits with minimal pecuniary and infrastructural requirements, that can revolutionize digital health in emerging economies with grassroots penetration. It incorporates medication adherence data with patient demographics in the form of EMR/EHR in an ethical manner and can empower agencies like medical insurance, clinical research, etc.

Conclusions: This research contributes to the overall health and well-being of the elderly population, emphasizing the importance of tailored interventions to address medication non-adherence.

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Medication adherence among patients with atopic dermatitis: a real-world study in Italy

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Abstract

Aim: Atopic dermatitis (AD) is a prevalent disease with a wide variety of treatments going from topical to oral medications as biologics. Several factors related to these medications such as side effects or treatments regimens could impact on adherence and undermine treatments continuation. Study aim is to estimate adherence patterns based on AD medication type.

Methods: A retrospective observational study was carried out using electronic health records from the Campania region (Italy) public healthcare system. Subjects were included if they have a new register of an ICD-9-CM code related to AD and a prescription registry of oral dupilumab and topic tacrolimus. Adherence was evaluated according to the EMERGE guidelines evaluating initiation, as primary non-adherence, and discontinuation at 6 and 12 months.

Results: A total of 825 AD incident patients were included. Overall, 65% had between 18 and 64 years old and 20% had less than 18 years. One of every five patients had an oral dupilumab prescription and 16% had a topical tacrolimus prescription. Overall, 17.3% of patients do not initiate therapy, particularly those with tacrolimus prescription (38%). On the other hand, in the whole cohort analysed they discontinue 24% with dupilumab and 76% with tacrolimus at month 6 and at 31% and 77% at month 12.

Discussion/Conclusions: The low rates of discontinuation of oral dupilumab in AD treatments reveal an important improvement in adherence, emphasizing a huge gain over the challenge posed by the complex regimens of these treatments.

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Exploring the role of transitional states in medication adherence: A SEM approach

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Abstract

Aim: This study aims to investigate the role of liminality—a transitional phase during which individuals are in an intermediate state, not fully integrated into their new disease identity—in medication adherence.

Methods: The Hungarian sample, drawn from 1,000 representative individuals, includes 482 respondents with chronic diseases who regularly take medication. A structural equation modelling (SEM) method was applied. The direct effects of financial affordability (AFF), beliefs about medication (BMQ Necessity and Concerns), and intentional non-adherence (INAS Resisting Illness and Testing Treatment) on medication adherence (MARS5) were investigated. Additionally, the moderation of resisting illness (as the measurement of liminality) on these effects was examined.

Results: Financial difficulties increase medication non-adherence, which is the most substantial effect in the model. A stronger belief in the necessity of medications reduces non-adherence, though this effect is weak. Conversely, increased concerns about prescribed medications and higher levels of treatment questioning both contribute to greater non-adherence. Contrary to expectations, illness rejection negatively affects non-adherence.

Illness rejection moderates the effect of concerns about medication, although the effect is weak. It doesn't moderate the impact of necessity. Furthermore, contrary to expectations, higher illness rejection reduces the effect of treatment testing on non-adherence.

Conclusions: Financial challenges and medication concerns worsen adherence, and illness resistance exacerbates these effects. Understanding these dynamics can inform targeted interventions. This study contributes to the existing literature by emphasising the role of liminality in the case of medication adherence.

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Exploring nurse prescribing practices and preferences in Belgian hospitals: A multicenter survey tudy on healthcare providers' perspectives and expected impact

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Abstract

Background/Aims: Currently nurse prescribing is not allowed in Belgium. The aims of this study were: (i) to describe current nurse prescribing practices in Belgium notwithstanding the absence of a legal framework, (ii) to evaluate what model of nurse prescribing is preferred by healthcare providers and (iii) to assess the anticipated impact of implementing nurse prescribing in Belgian hospitals.

Methods: A quantitative, cross-sectional survey study was performed to collect data on the practices and preferences of nurses, pharmacists, and physicians toward nurse prescribing and the expected impact of implementing nurse prescribing in Belgian hospitals. In 7 hospitals in Flanders from December 2022 until April 2023 participants received an informative video explaining models of nurse prescribing (independent- and supplementary prescribing) followed by an online survey.

Results: The survey was completed by 303 healthcare providers, with a mean age of 40 years. Nurses represented 86% of respondents, medical doctors 10% and pharmacists 4%. According to the experience in their current work context, 75% of nurses and medical doctors reported nurses already decide independently to prescribe or deprescribe medication or to administer over-the-counter (OTC) medications. About one-fifth reported nurse prescribing of prescription-only medication on a daily or weekly basis and mainly for the initiation of a new medication. Main reasons were having the skills, acceptance at the department, emergency situations and the doctor not being available. In total, 44% would prefer to grant independent prescribing authority to nurses.

Conclusions: Despite the current absence of a legal framework, in Belgian hospitals, nurses do prescribe medication on a regular basis.

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Adherence to hypertension treatment among older individuals: do depression and anxiety influence implementation trajectories?

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Abstract

Aim: To explore the association between depression and anxiety and adherence to antihypertensive medications among persons aged 65 and older in Quebec, Canada.

Methods: This is a secondary analysis of the Étude sur la Santé des Aînés (ESA)-Services cohort, combining health survey and medico-administrative data. Patients aged ≥65 years were recruited in primary care settings. We conducted a cohort study to assess adherence (implementation phase) following antihypertensive treatment initiation. Persons were deemed to have depression or anxiety if they expressed symptoms, collected in the ESA interviews, in accordance with the criteria of the Diagnostic and statistical manual of mental disorders 4th edition (DSM-IV). Adherence trajectories were identified using medication claims data. Group-Based Trajectory Modeling (GBTM) was applied to monthly Continuous Multiple-Interval Medication Availability (CMA) measures over one year after health survey completion. Associations between mental health disorders and adherence trajectories were measured using multinomial logistic regression models, adjusting for potential confounders.

Results: Among the 558 patients initiating a new antihypertensive medication during the study period, two distinct adherence trajectories were observed: consistently high monthly adherence (82.3%) and declining monthly adherence (17.7%). Anxiety was positively associated with consistently high adherence (β=-0.99 [-1.89; -0.09]), while depression showed no significant association with adherence patterns (β=0.14 [-0.62; 0.90]).

Conclusions: Our results show a positive association between anxiety and antihypertensive medication adherence among older individuals but no association with depression. Considering the study limitations, these observations underscore the importance of integrating mental health considerations in primary care hypertension management for the elderly.

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Understanding medication adherence among the elderly: Study protocol

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Abstract

Aim: Polypharmacy, the use of multiple prescription drugs, is increasingly common. In Poland, over 23 million people use prescription medications, with about 11.7% on ten or more drugs. This raises the risk of drug-drug interactions (DDIs), which threaten patient safety. This study will assess elderly patients' adherence to medication based on their drug count and cognitive function, identify the prevalence of DDIs, and evaluate the effectiveness of various medication management strategies.

Methods: Participants will complete validated medication adherence questionnaires (e.g., Morisky Medication Adherence Scale), undergo medication reviews with photographic documentation, and be assessed using the Mini-Mental State Examination (MMSE) for cognitive function. Depressive symptoms will be measured with the Geriatric Depression Scale (GDS), while health literacy will be evaluated using the Health Literacy Survey Questionnaire (HLS-Q16). The General Self-Efficacy Scale (GSES) will assess participants' confidence in managing their medication. Data will be analyzed using statistical software to identify correlations and trends.

Results: Expected outcomes include revealing the relationships between medication adherence and factors such as age, cognitive decline, and depression. Additionally, the study aims to determine how different medication management strategies influence adherence and to explore the impact of health literacy and self-efficacy on adherence levels.

Conclusions: This research will inform healthcare providers, policymakers, and pharmaceutical companies by highlighting factors influencing elderly medication adherence. It aims to guide interventions, improve patient outcomes, and reduce healthcare burdens. The findings may also shape guidelines for managing pharmacotherapy in cognitively impaired individuals and strategies to minimize drug interaction risks.

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Management of medication adherence: A national perspective from Italian stakeholders.

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Abstract

Aim: Medication adherence (MA) is crucial for managing chronic diseases, yet there is an unmet need in national health policy agendas. This study explores the perspectives of Key Opinion Leaders (KOLs) on effective MA management in Italy.

Methods: A SWOT-Analysis was conducted with 30 stakeholders from three different Italian regions: n=10 from Campania (South), n=10 from Lazio (Center) and n=10 from Liguria (North), providing insights into the Strengths, Weaknesses, Opportunities, and Threats of MA in their regions. The survey was structured into two macro-areas: MA improvement strategies (n=5 questions) and factors influencing MA (n=2 questions). Thereafter, a multidisciplinary focus group with KOLs from North, Central and South was formed to identify strategies for implementing MA improvements.

Results: In Southern Italy, 70% of KOLs participated (43.8% physicians and 37.5% pharmacists). Prescription monitoring was the primary method of assessing MA (63.6%), with communication and educational campaigns identified as key interventions. In Central Italy, 60% of KOLs responded, mainly hospital pharmacists (83%), using prescription data (57.1%) and medical records (42.9%) for monitoring. Education programs (26.7%) and patient communication were the preferred interventions. In Northern Italy, 70% of KOLs participated, with prescription monitoring (50%) being the main method. Major barriers included gaps in patient education and healthcare provider training. Patient awareness of adherence was low across regions.

Discussion/Conclusions: The SWOT-analysis, combined with the KOLs'experiences, provides a comprehensive assessment of the national adherence landscape. This multidimensional approach aids in identifying directives to manage MA, which should be included in future health policy agendas.