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BRIDGING GAPS IN MEDICATION ADHERENCE: STAKEHOLDER ENGAGEMENT AND INTERPROFESSIONAL INTERVENTIONS

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Abstracts selected for oral presentations

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PAPER SESSION 1

Medication adherence in older patients with multimorbidity: the role of social determinants

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Abstract

Aim: Medication adherence (MA) in patients with multimorbidity is multifactorial and directly impacts on health outcomes. This study aims to describe medication persistence and related factors in patients with multimorbidity.

Methods: Cohort baseline data of 1,057 patients aged ≥65 years with ≥3 chronic conditions and polypharmacy (≥5 chronic medications) from MULTIPAP PLUS Study carried out in Madrid, Aragon, Andalucía. Variables: Persistence (ABC Taxonomy) assessed by 4-item Morisky-Green questionnaire; social determinants: sociodemographic (age, sex, marital status, social class, working situation, income), environment characteristics (urban vulnerability indicators), social support (DUFSS questionnaire); quality of life (EuroQol-5D-5L), disability (WHODAS questionnaire); years doctor experience, clinical and pharmacological data. Descriptive and multivariate logistic regression analyses explored the association between social determinants and nonadherence. Ethical approval obtained, written informed consent.

Results: Sociodemographic profile: age 69.8(3.5) years; women: 57.1%; retired: 93%; mainly secondary/higher education (75.21%) and low income (<1050 €/month, 93.7%); urban vulnerability: 28.86%; low social support: 34.91%. Clinical profile: 6.28(2.32) diseases/patient; 7.91(2.79) drugs/patient; quality of life utilities (EQ-5D): 0.74(0.22), WHODAS disability 16.06(15.95). Adherent versus non-adherent patients differ in: number of drugs (p=0.042), urban vulnerability indicators (p=0.014), social support (p=0.040), quality of life utilities (p=0.000), disability (p=0.000). MA was associated with quality of life utilities (OR=0.269 [0.127–0.573]; p=0.001) and working doctor experience (OR=0.687 [0.475–0.992]; p=0.045).

Discussion and Conclusion: Social determinants differ between adherent and non-adherent patients with multimorbidity. They showed no relationship with MA, which was associated with self-perceived health and job stability of the professional in charge.

Medication adherence in primary care patients with chronic cardiovascular conditions: insights from a real-world cohort analysis

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Abstract

Background: Medication adherence is key to cardiovascular (CV) therapy effectiveness. Studies report suboptimal implementation to cardiovascular therapy, influenced by determinants like age, low income and polypharmacy, amongst others. Real-world evidence is needed to map adherence predictors in real-world settings.

Aims:

* To assess medication adherence (i.e. implementation) in primary care patients with chronic cardiovascular conditions in Andalusia (Spain).
* To identify medication adherence predictors of adequate implementation.

Methods

* Retrospective observational study based on real-world data.
* Data source: Andalusian Population Health Database (2016-2023).
* Participants: adults in public primary care with ≥1 chronic CV diagnosis and ≥1 CV medication dispensed in community pharmacy.
* Implementation (weighted proportion of days covered, PDC) for all CV medications was analysed. A univariate descriptive analysis was conducted to determine implementation related variables. To explore predictors of implementation, multivariate analyses were performed using machine learning models (i.e. logistic regression and random forest). AUC assessed the discrimination ability of the model; SHAP values interpreted feature importance.

Results: Of the 428.678 included, 42.1 % showed adequate implementation (weighted PDC ≥ 0.8). Logistic regression outperformed random forest in determining implementation predictors. SHAP values highlighted that higher vaccination rates, longer treatment duration and higher treatment cost as predictors of optimal implementation, while a greater number of medications was a predictor of suboptimal implementation. Further analyses are in progress.

Discussion and Conclusion: Implementation remains suboptimal. Modifiable factors (i.e. preventive health behaviours, treatment continuity, and regimen complexity) emerged as key targets for future adherence-enhancing interventions. These preliminary findings guide adherence profiling and strategies to improve cardiovascular care.

Prescribing and initiation of guideline-recommended drugs after acute myocardial infarction: an analysis of gender inequalities

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Abstract

Aim: To explore gender inequalities in the prescription and initiation of guideline-recommended medications following a first acute myocardial infarction (AMI), through the analysis of real-world data (RWD), and to identify the factors that may be contributing to these inequalities.

Methods: A population-based observational study was conducted in the Spanish CARhES (CArdiovascular Risk factors for hEalth Services research) cohort, including subjects who had survived a first AMI in 2017-2022 and had at least 180 days of follow-up. Medication initiation was assessed by analysing the concordance between prescription and dispensing data within 30 days following AMI. The analyses were stratified by gender and type of user (new vs. former) and Blinder–Oaxaca decomposition was used to identify contributing factors.

Results: Within the 3,975 patients studied, women (27.8%) were older, had more comorbidities and lower socioeconomic status. Women were less frequently prescribed antiplatelets, beta-blockers and lipid-modifying agents, but received more other comedications such as rivaroxaban and calcium channel blockers. Age, morbidity burden and urban residence were identified as the primary contributors to the observed differences in prescribing pattern. Initiation of post-AMI drugs were similar between women and men.

Discussion and Conclusion: Although no significant inequalities were identified in initiation between genders, evidence suggests that women may experience under-recognition of cardiovascular risk and less therapeutic effort. With women being older, with more comorbidities and lower socioeconomic status, gender-based strategies, designed from an intersectional perspective, are crucial to improve equity in guideline-recommended treatment use.

Beliefs about inhaled treatment: contrasting perspectives between patients and healthcare professionals

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Abstract

Aim: Beliefs about inhalers in patients with chronic obstructive pulmonary disease (COPD) influence medication adherence. Practitioner beliefs may play a role in these beliefs. This study aims to compare beliefs about inhalers in patients and primary healthcare (PHC) professionalswith a validated questionnaire of beliefs about inhalers (CCTI).

Methods: Cross-sectional study. Professionals:71 non-random sample (general practitioners, community nurses, trainees) from3 urban health centres including rural clinic. Variables: sex, age, profession, years of practice (general, current quota), rural/urban centre, respiratory disease, use of inhalers (time of use, regimen), smoking habit. Patients:77 random sample of COPD patients. Variables: sex, age, education, severity, smoking habit, exacerbations/year, inhaler time, type of treatment. Medication adherence (MA) Persistence (according to ABC taxonomy): Morinsky-Green test (MG); dose counting (DC); overall adherence (OA=MG+CD). Beliefs assessment: CCTI questionnaire (score 0-10).

Results: Patients' MA Persistence: MG 51.7%, CD 65.5%, OA 39.7%. Professionals' beliefs (% errors): CCTI score 8.6(1.5)/10: inhalers are the treatment of the disease (33.8%), inhaler must be felt that it enters the bronchi (21.1%), inhalers used daily reduce asphyxia (16.9%). Patients' beliefs (errors): CCTI questionnaire score 5.62(2.31); inhaler must be felt that it enters the bronchi (79.3%), use the inhaler as little as possible (36.2%), when getting better the inhaler is stopped (34.5%), the inhaler makes the mucus more liquid (32.8%).

Discussion and Conclusion: Marked differences between professionals' and patients' beliefs. Patients are reluctant to use inhalers continuously and would stop when they get better. Both believe that physically feeling the inhaler is linked to its effectiveness.

PAPER SESSION 2

Assessment of adherence in a clinical trial: results of the RenoMet study

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Abstract

Aim RenoMet investigated metformin as renoprotector of progressive kidney disease. Despite the per-protocol electronic monitoring of adherence, the Belgian Federal Agency for Medicines obliged us to use 'pill count' for adherence control. We aim to report on adherence comparatively assessed by electronic monitoring versus pill count.

Methods Renomet is a double-blinded, placebo-controlled, randomized clinical trial repurposing metformin in a new class of patients (chronic kidney disease). Patients from 19 Belgian renal care clinics were randomized to metformin treatment or placebo (2 tablets of 500mg daily, taken during the evening meal) during a follow-up period of 30 months. Implementation of treatment was assessed by MEMS devices and pill-counts during 4-monthly FU visits. In case of adherence below 85%, a standardized nurse-led intervention was used to improve adherence.

Results A total of 254 patients was included (128 metformin, 126 placebo) (mean age 65, 59% male). Early treatment discontinuation was noticed in 71 patients with 41% for reason of refusal to continue treatment. Median adherence during the entire FU period was 96.5% (IQR 90.5 – 98.5) in both treatment arms. Adherence was constantly above 85% in 58% of patients while an additional 21% only went once under this cut-off. Interventions ranged from 27 to 18 per FU, leading directly to satisfactorily adherence in 40% of cases. Comparison with pill count revealed pill dumping in non-adherent patients.

Discussion and Conclusion Electronic monitoring, confronting patients directly with their intake pattern followed by simple patient-oriented interventions to correct non-adherence, is highly recommended in all clinical trials.

Quantification of early treatment discontinuation: a retrospective analysis on 6,367 clinical trial participants

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Abstract

Background: Early treatment discontinuation is frequent in clinical trials and must be considered when planning and running such a trial. Electronic recording of medication intakes allows to precisely determine when someone stops taking their medication.

Aim: Combine data from previous recent clinical trials to gain insights into persistence to treatment across countries, dosing frequencies, and therapeutic areas.

Methods: Medication intake data from past studies were collected, anonymized, and pooled. The time of treatment discontinuation was determined using a previously published algorithm. Implementation adherence was computed as the proportion of doses taken. When available, sponsor-provided information about whether a participant discontinued their treatment was incorporated. A Kaplan-Meier survival curve was built from the pooled dataset.

Results: Data from 20 studies were included, performed between 2014 and 2024. These studies enrolled a median number of 89 participants (Q1: 41, Q3, 534); total: 6,367 participants. Dosing frequency was mostly once (46%) or twice (38%) daily. The median expected follow-up duration was 336 days (Q1: 84, Q3: 483). One-year persistence was 69%. Four percent of participants never initiated treatment. Poorer implementation was associated to worse persistence.

Discussion and Conclusion: A similar analysis was performed in 2012. In this analysis, non-initiation was 2%, corresponding to our findings. However, in 2012, one-year persistence was 60%. This difference could be explained by the increased focus on adherence in clinical trials. Early treatment discontinuation is common, even in the controlled environment of clinical trials. Implementation and early discontinuation are inter-related. These findings highlight the importance of monitoring medication adherence.

The development of guidelines for the measurement, analysis, and reporting of medication adherence during the run-in phase of trials (AdheRUNce): a modified Delphi study

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Abstract

Aim: Trial run-in phases are sometimes used to select adherent patients for the main trial, but the methods employed lack clear regulatory guidance and there are concerns about the transparency of reporting. Details of the development of the AdheRUNce consensus guidelines for the Measurement, Analysis, and Reporting of Medication Adherence during the Run-in phase of clinical trials will be presented.

Methods: The development of the initial items was informed by a systematic review of trial run-in phases. A modified Delphi survey of experts in the adherence and clinical trials research communities recruited via email mailing lists, was undertaken to reach consensus on guideline items. Survey round one asked respondents to rate the importance of items across a Likert scale of 1 (strongly agree) to 5 (strongly disagree) and to provide free-text comments. Round two asked respondents to categorise items as essential or desirable and suggest alternative wording for the items.

Results: During the first survey round, 49 respondents rated 29 guideline items. Consensus was achieved for 28 out of the 29 items, and 226 free-text comments were received. Results from the second survey round will be presented, along with the final AdheRUNce guidelines.

Discussion and Conclusion: The AdheRUNce guidelines are the first to specifically address medication adherence in trial run-in phases. They should serve to inform future trial design, conduct and reporting, as well as have regulatory implications.

Low medication adherence during therapy implementation is associated with earlier disease progression and therapy change among patients on oral anticancer medication for multiple myeloma: a prospective cohort study

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Abstract

Aim: To explore associations between electronic event monitored (EEM) adherence and clinical events in patients taking oral anticancer medications (OAMs) for multiple myeloma (MM)

Methods: Six months of EEM adherence data from 69 patients prescribed OAMs during therapy implementation yielded monthly percent of dosing events (PDEA) and percent of days (PDA) adherence indices. Clinical events included disease progression, therapy change, and all-cause mortality. Group-based trajectory modeling (GBTM) identified adherence trajectory groups. Survival analyses explored associations between EEM adherence and clinical events

Results: Participants were prescribed lenalidomide (69.7%) or pomalidomide (30.3%). GBTM revealed three PDEA trajectories: high (62.9%); high/moderate (27.1%); and low (10%). Two PDA trajectories were identified: high/decreasing (81.4%) and low/stable (18.6%). Participants were evaluated up to 1286 days, with 33 (47.8%) experiencing disease progression, 50 (72.5%) changing therapy, and 11 (16%) dying. The low PDEA group experienced 3.23 times the rate of disease progression than the high PDEA group (95%CI=1.17,8.90), with no differences between PDA groups ($p \geq .05$). The low PDEA group had 7.75 times the rate of therapy change than the high PDEA group (95%CI=3.06,19.60), and the low PDA group had 2.15 times the rate of therapy change than the high PDA group (95%CI=1.09,4.24). Neither PDEA nor PDA adherence grouping was associated with all-cause mortality ($p \geq .05$)

Discussion and Conclusion: Lower adherence groups were at greater risk of adverse clinical events, providing support for a clinically meaningful threshold for nonadherence and a critical need for interventions to prevent nonadherence in real-world clinical management of MM.

PAPER SESSION 3

Profiles of non-adherence among solid organ transplant recipients; an innovative approach for individualizing adherence interventions

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Abstract

Aim: This study aimed to identify distinct profiles of non-adhering solid organ transplant recipients (SOTRs) and explore their associations with sociodemographic and clinical variables. Non-adherence to immunosuppressive medication after solid organ transplantation may lead to rejection of the transplanted organ with a negative impact on the health status of SOTRs. Individualized interventions to promote adherence are considered most promising. However, these interventions are often resource-intensive and clinical feasibility has been questioned. Examining whether subgroups can be distinguished based on similar reasons for non-adherence may provide insights for individualization of interventions.

Methods: Based on the Basel Assessment of Adherence to immunoSuppressive medIcations Scale© (BAASIS©), 549 non-adherent SOTRs were identified among participants in the TransplantLines Biobank and Cohort-study of the University Medical Center Groningen, the Netherlands. To identify distinct profiles, Latent Profile Analysis was performed using psychological and health-related variables relevant to non-adherence.

Results: Two profiles of non-adherent SOTRs were identified. Profile 1 comprised 78.9% (n=433) SOTRs whom showed overall a low burden on all psychological and health related variables that were taken into account. SOTRs in profile 2 (n=116, 21.1%) showed an overall high burden, i.e., more symptoms of anxiety and depression, more medication side-effects, and lower perceived control. SOTRs in the Low Burden profile were more often males and employed, while recipients in the High Burden profile were more often females and on disability leave.

Discussion and Conclusion: Tailoring of interventions based on the Low and High Burden profiles can add to an individualized approach for addressing non-adherence in SOTRs.

First insights into medication non-adherence among older adults in Brazilian public tertiary care: a cross-sectional study

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Abstract

Background: Medication non-adherence is an understudied barrier to effective chronic disease management in older adults and contributes to the inefficient use of healthcare system resources, especially in low- and middle-income settings.

Aim: To explore factors associated with medication non-adherence in older adults followed in public tertiary outpatient clinics.

Methods: We analyzed 610 individuals ≥60 y from outpatient clinics in two Brazilian cities. Structured face-to-face interviews were conducted between August 2024 and June 2025. Adherence was assessed using the 7-item Medication Adherence Questionnaire (MAT). Covariates included sociodemographic data, comorbidities and medication regimens (from medical records), cognitive status (MoCA), grip strength, chair stand, loneliness (UCLA), and beliefs (BMQ).

Results: Participants had a mean age of 70.1 years (SD 6.7), and 356 were women (56.7%). Low education, with 438 (71.8%) , monthly income < 3 minimum wages (n=424, 69.5%). Most prevalent comorbidities were hypertension (n=505, 82.8%), dyslipidemia (n=315, 51.6%), diabetes (n=292, 47.9%), Sarcopenia (n=362 59.3%), and 165 (27.0%) were functionally dependent. Moderate or severe loneliness was reported by 44 participants (7.2%). Non-adherence was observed in 159 participants (26.1%). In multivariate analysis, predictors included perceived barriers (OR = 3.01; 95% CI 1.63–5.57), negative beliefs (OR = 2.52; 95% CI 1.64–3.87), loneliness (OR = 1.66; 95% CI 1.24–2.22), being physically active (OR = 0.60; 95% CI 0.41–0.90), and having high income (OR = 0.81; 95% CI 0.68–0.96).

Discussion and Conclusion: Non-adherence to medication was associated with modifiable psychosocial and behavioral factors. Whether interventions targeting these factors can improve adherence remains to be determined.

Persistence to asthma controller medications among children and adolescents in Lithuania: a nationwide study

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Abstract

Aim: Despite the availability of effective treatments, asthma control remains suboptimal. This study investigates the persistence of asthma medication use among children and adolescents in Lithuania.

Methods: A retrospective cross-sectional study was conducted using data from the national SVEIDRA database. A total of 139,532 paediatric patients who received at least one reimbursed asthma medication between 2013 and 2019 were included. Descriptive statistics, chi-square tests, and logistic regression models were applied to assess treatment alignment with GINA guidelines and persistence over one- and two-year periods. Persistence was evaluated among long-term users—those prescribed inhaled corticosteroids, leukotriene receptor antagonists, or their combinations at least twice within 18 months. A Proportion of Days Covered (PDC) of ≥80% defined persistence. Ethical approval (No. 2021/2-1314-792) was granted by the Vilnius Regional Biomedical Research Ethics Committee.

Results: Among 26,147 patients who initiated asthma treatment, 90% started therapy in line with guidelines—75% with combination therapy. Of these, 74% were identified as long-term users. Persistence to controller medication was 3.1% at one year and 2.2% at two years. No significant differences were found by gender or municipality. Higher persistence was observed among children aged 0–5 years, those treated by pulmonologists or physicians with multiple qualifications, and those initiated on combination therapy.

Discussion and Conclusion: Despite guideline-concordant initiation, persistence to asthma controller medications among Lithuanian children is alarmingly low. Younger age and specialist care were linked to higher persistence, suggesting caregiver and professional support matter. Further research should explore clinical factors influencing adherence patterns.

The moderating role of time since diagnosis in predicting medication adherence

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Abstract

Aim: This study aims to examine how time since diagnosis moderates the effects of financial affordability and medication beliefs on non-adherence among patients with chronic illnesses. It introduces a novel perspective that integrates time as a dynamic contextual moderator in the medication adherence process.

Methods: A survey was conducted with 500 Hungarian patients living with chronic conditions. Participants completed scales: MARS-5, BMC and the Financial Affordability Scale. Structural Equation Modelling (PLS-SEM) was applied to test direct and moderating effects.

Results: Financial burden and concern beliefs predicted stronger medication non-adherence, while necessity beliefs had a weakening effect. Time since diagnosis moderated two effects: it weakened the impact of financial affordability on non-adherence and strengthened the protective effect of necessity beliefs. No significant moderation was found for concerns about medication. The model explained 39.8% of the variance and showed good fit (SRMR = 0.043).

Discussion and Conclusion: Findings indicate that financial constraints and medication beliefs are predictors of non-adherent behaviour, but their impact evolves over time. Newly diagnosed patients are more influenced by necessity beliefs, while the effect diminishes with chronicity. Conversely, financial barriers undermine medication adherence, but this influence tends to lessen over time. Time is thus a critical contextual moderator shaping adherence decisions dynamically. This study highlights the need to tailor adherence interventions to different phases of the illness journey. Early engagement should focus on strengthening necessity beliefs and addressing financial barriers.

PAPER SESSION 4

Self-Adjusting Long-Term Medications: A Qualitative Descriptive Study of Patient Practices

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Abstract

Aim: In response to challenges related to medication knowledge and management, patients may modify their long-term medication regimens by adjusting doses, changing intake frequency or temporarily/permanently interrupting treatment, often without consulting healthcare providers. This study aims to explore the motivations and mechanisms behind medication self-adjustments, their perceived consequences, and the decision-making processes involved.

Methods: Semi-structured interviews were conducted with ambulatory patients who had self-adjusted their long-term medication without consulting a healthcare provider. Patients were invited through advertisements in the University Hospital, medical practices, pharmacies and patient associations. Data analysis was carried out iteratively and inductively between the original data and emerging interpretations using MAXQDA 24.6.0.

Results: 24 participants were included. The themes were categorized into four domains: motivations, resources, outcomes and perspectives. Adjustments were often motivated and guided by physical sensations or intuitions, and individuals prioritized personal experience over medical recommendations. Self-adjustments were seen as a necessary process of experimentation, allowing individuals to better understand the effect of the medication on their bodies. Participants established personal hierarchies regarding the importance of medications, shaped by treatment duration, perceived consequences of discontinuation, and the clinical context in which the prescription was initiated.

Discussion and Conclusion: These findings highlight the importance of recognizing patients' active engagement in self-adjusting their medication based on their beliefs and priorities. Involving patients in timely treatment discussions can help align medical

recommendations with patient preferences. Future research should focus on developing collaborative care frameworks that promote shared decision making for long-term medication management.

Challenges and opportunities in medication self-management of young people with a chronic disease: a 'FUTURE' needs assessment

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Abstract

Aim: Adequate medication self-management is a prerequisite for safe and effective medication use. This is, however, particularly challenging among adolescents and young adults with a somatic chronic disease (AYAs-SCD), who are in the midst of the transition to adulthood. Our study aimed to identify barriers and facilitators of AYAs-SCD regarding medication self-management as a first step in the development of the 'FUTURE toolbox' that will support AYAs-SCD in their medication self-management.

Methods: Semi-structured interviews (online and in-person) with AYAs-SCD (with CF, IBD and JIA) were held. Interview questions were guided by the COM-B domains: 'Capability', 'Opportunity' and 'Motivation'. The interviews were recorded, transcribed and deductively thematically analyzed using MAXQDA.

Results: Thirteen AYAs-SCD (12-25 years) were interviewed. Frequently mentioned barriers for optimal medication self-management included: Capability: difficulties in administering medication, and forgetfulness; Opportunity: integrating the medication scheme into daily life; Motivation: concerns about side effects, feeling anxious about injecting medication, and being sceptical about the effectiveness of medication. Facilitators were: Capability: active involvement in the decision making about one's medication regime; Opportunity: having a set routine, support from relatives; Motivation: the feeling that medication enables you to do what you want in life, high belief in the necessity of medication.

Discussion and Conclusion: This needs assessment identified opportunities for further support of AYAs-SCD regarding medication self-management. The identified barriers and facilitators will be used as input for the second step: co-creation workshops with AYAs-SCD to identify tools to support medication self-management, which will be included in the 'FUTURE' toolbox.

Digital technologies to support medication adherence – expectations of using MATech features among patients with type 2 diabetes

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Abstract

Background: Medication Adherence Technologies (MATech) have the potential to improve medication adherence and clinical outcomes, but solutions are commonly evaluated post-development by individual companies, with an emphasis on product-specific designs or technical interfaces rather than usefulness for patients. Understanding patient needs, particularly regarding features supporting medication adherence, is essential for designing effective solutions.

Aim: To explore Type 2 Diabetes patients' expectations of using various MATech features.

Methods: Qualitative semi-structured interviews were conducted among 13 patients with Type 2 Diabetes in Sweden. Participants were recruited via patient organizations, social media, and primary healthcare centers. Purposeful sampling, informed by pre-interview questionnaires, was used to ensure diversity in age, sex, education, country of birth, self-rated medication difficulties and technology proficiency. Interviews were analyzed with qualitative content analysis.

Results: There was a variation in age, sex, education and birth country among patients interviewed. Most patients had high technology proficiency, while self-rated medication difficulties varied. Patients highlighted that MATech features such as medication reminders, and self-monitoring of medication intake and outcomes, could promote a sense of security and control over their condition and medication utilization. Perceived usefulness depended on the technology´s ability to address multiple aspects of treatment needs, personalization capacity and functionality to support self-reflection and insights. While MATech was seen as a valuable and efficient complement to healthcare, participants emphasized the continued importance of in-person follow-up when necessary.

Discussion and Conclusion: MATech features have the potential to empower patients and enhance treatment engagement, when designed with a focus on perceived usefulness and individualization.

Patient treatment beliefs as determinants of medication adherence: a meta-analytic review of the necessity concerns framework 12 years on

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Abstract

Aim: Patients' beliefs about treatment influence decisions to start with and continue treatment. The Necessity Concerns Framework (NCF) is a widely used framework which operationalises these beliefs (perceived need for treatment and concerns about adverse consequences). This review aimed to update a previous review, to test the utility of the NCF and to identify how widely it has been applied.

Methods: Embase, Medline, PsycINFO and CINAHL were searched from 1999-April 2024 for relevant articles assessing a relationship between treatment beliefs using the Beliefs about Medicines Questionnaire (BMQ) (Necessity beliefs, Concerns or Necessity Concerns Differential) and adherence (initiation, implementation or discontinuation) across any medical condition. Data was extracted and meta-analyses were conducted using random effects models in R. Methodological quality was assessed using a short checklist.

Results: Of 41,216 articles, 302 were included in the review (n=82,800). Meta-analyses showed that across studies, higher adherence was associated with stronger perceptions of necessity of treatment (OR=1.20, 95% CI=1.18-1.23), fewer concerns about treatment (OR=0.82, 95% CI=0.81-0.84) and a more positive Necessity-Concerns Differential (OR=1.31, 95% CI=1.27-1.35). These relationships were seen across all condition and treatment types, all geographic regions, all three adherence related behaviours (initiation, implementation, discontinuation) and across all methodological quality levels.

Discussion and Conclusion: These findings support the application of the NCF in understanding non-adherence and provide further validation for the BMQ. The NCF is a disease agnostic framework which can be widely applied across conditions, countries and treatment modalities, highlighting the relevance of developing and implementing adherence support based on this model.

PAPER SESSION 5

Medication adherence in health technology assessment: a review of NICE appraisal considerations

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Abstract

Aim: Adherence is an important determinant of the clinical- and cost-effectiveness of medicines. Example influences relate to drug tolerability, patient preference for dosing regimens or routes of administration, differences between controlled trial contexts and routine use, and effects on healthcare costs. We aimed to examine the extent to which medication adherence is considered in decisions made by the National Institute for Health and Care Excellence (NICE) in the UK.

Methods: 'Committee Discussion' sections of NICE technology appraisals of pharmaceuticals, published between January 2016 and April 2025 were searched for mentions of adherence, compliance, missing, discontinuation and persistence, with suffix variations. The frequency and context of mentions were recorded, and a thematic analysis performed.

Results: NICE published 678 technology assessment reports of pharmaceutical products over the sampling period, of which 225 (33%) made reference to the search terms, and of these, 69 (10%) were in the context of medication adherence. The median number of mentions per report was 2 (range 1, 51). Three broad themes emerged: (i) NICE's consideration of qualitative evidence from patients or patient organisation groups; (ii) manufacturer claims of therapeutic advantage linked to improved adherence; and (iii) adjustments to cost-effectiveness estimates based on incorporation of adherence parameters in economic models.

Discussion and Conclusion: NICE considered medication adherence explicitly when deciding on whether the National Health Service should make available around 10% of new medicines/indications. Patient perspectives as well as clinical trial and real-world evidence featured prominently. Funded by UKRI's (10042451) contribution to the GENEGUT project (https://genegut.eu/).

Do financial incentives improve medication adherence? evidence from trends in the three adherence measures for diabetes, hypertension, and cholesterol medications used in Medicare Part-D Star Ratings for prescription drug insurance plans in the U.S., 2012–2025

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Abstract

Aim: To analyze trends in the three medication adherence measures in Medicare Part-D prescription drug plans and their star ratings that determine financial incentives.

Methods: This observational study examined yearly trends (2012-2025) in mean proportion of days covered (PDC) for the three drug classes for treating diabetes, hypertension, and cholesterol. In line with how Medicare offers financial incentives (rebates and discounts) tied to star ratings, plans were grouped into three performance categories: low-performing (≤3 stars), intermediate-performing (3.5–4 stars), and high-performing (≥4.5 stars). We also analyzed trends in the distribution of Part-D plans among these three performance categories. Statistical significance of trends was assessed using linear regression.

Results: Adherence (PDC) improved significantly from 2012 to 2025 across all drug classes and star categories ($p<0.001$). For diabetes, hypertension, and cholesterol medications, PDC increased from 69%, 68%, and 64% to 84%, 86%, and 86% in low-performing plans; from 77%, 76%, and 73% to 87%, 89%, and 89% in intermediate-performing plans; and from 81%, 81%, and 77% to 89%, 91%, and 91% in high-performing plans, respectively. Plan distribution shifted substantially: in 2012, 54% of plans were low-performing, 36% intermediate, and 10% high; by 2022, these shifted to 7%, 55%, and 38%. However, the proportion of high-performing plans declined recently, reaching 17% in 2025.

Discussion and Conclusion: Medication adherence measures in Medicare Part-D plans have improved significantly since their introduction in 2012, likely driven by financial incentives. However, adherence gains appear to have plateaued, suggesting limited potential for adherence measures to improve star ratings.

Implementing comprehensible prescription labels and the teach-back method in Dutch community pharmacies

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Abstract

Aim: To evaluate the implementation of a complex intervention consisting of comprehensible prescription label (CPL) instructions and the teach-back method (TBM) at first dispensing in two community pharmacies in the Netherlands.

Methods: This mixed-methods study was guided by the RE-AIM framework. We collected quantitative data on all first-time dispensings during three two-week periods (2 weeks, 3 months, and 6 months post-implementation) to assess Reach, Implementation, and Maintenance. To explore provider-perceived Effectiveness, Adoption, and identify implementation barriers and facilitators (guided by the Consolidated Framework for Implementation Research), we conducted semi-structured interviews and a focus group with pharmacy staff.

Results: Across the pharmacies, 2,026 first prescriptions occurred. TBM was applied in 66.3% of cases and CPL in 78.5%. Application rates remained consistent with no significant decline over the six-month study period. Providers perceived the intervention enhanced patient comprehension and engagement, which improved medication understanding. Providers adopted both TBM and CPL, though adoption varied due to workflow. Key facilitators were active coaching by a project champion, increased job satisfaction and periodic reflection meetings. Common barriers included language limitations and counseling for multiple concurrent prescriptions. Pharmacies intended to continue the intervention post-study.

Discussion and Conclusion: The combined TBM and CPL intervention was successfully and sustainably implemented in routine community pharmacy practice. These methods address a key barrier to medication adherence, leading to improved patient comprehension: a foundational step to support patients in using their medication correctly.

What happens to drugs unused due to non-adherence? Insights into household medication disposal across Europe - interim results from the DISPOSAL study

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Abstract

Aim: Unused and expired medicines stored in households pose significant ecological and economic risks. Up to 50% of medication waste is linked to non-adherence, yet real-world data on disposal practices across Europe remain limited, hindering evidence-based policy. Therefore, the aim of this study was to assess national systems, real-world practices, and regulatory gaps in the collection and disposal of household medication waste across Europe.

Methods: A pan-European, cross-sectional study was conducted using a structured online survey. The questionnaire covered six domains: legal frameworks, collection logistics, public behaviour, economic aspects, environmental impact, and policy context. Invitations were sent to experts in healthcare, health policy, pharmaceutical regulation, and related fields. Descriptive statistics were used for analysis.

Results: As of June 15, 2025, 36 purposively selected experts submitted valid responses covering 29 European countries. Of these, 5 reported a lack of relevant national legislation. While most countries had national or regional collection schemes, 3/29 lacked such programmes. In 7/29 countries, the most common disposal method remained discarding medicines in household waste. Only 8 countries had conducted public awareness campaigns in the past five years, and just 5 had evaluated their effectiveness.

Discussion and Conclusion: Current systems for managing household medication waste in Europe are fragmented and insufficient. Medication non-adherence thus contributes not only to poor health outcomes but also to environmental harm. To mitigate the ecological consequences of non-adherence, Europe must implement not only preventive measures but also significantly strengthen systems for collecting and safely disposing of unused and expired household medicines.

PAPER SESSION 6

Leveraging electronic health record technology and team care to address medication adherence (TEAMLET): a pragmatic, cluster-randomized trial

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Abstract

Aim: Nonadherence to antihypertensive medications is under-addressed in clinical care, due to both lack of recognition and provider time constraints. Recent data linkages between electronic health records (EHRs) and pharmacies have created opportunities for scalable assessment of medication adherence at the point of care. Our aim is to test the effectiveness of an intervention that utilized linked EHR-pharmacy data to identify medication nonadherence in real-time combined with team-based care to address barriers to taking medications as prescribed.

Methods: A pragmatic, cluster-randomized trial designed to test the effectiveness of the TEAMLET intervention versus usual care on medication adherence (primary outcome) and blood pressure (secondary outcome). We included all patients with uncontrolled blood pressure, defined as >140/90, and low medication adherence, defined as proportion of days covered (PDC)<80%, who were seen in enrolled sites. The TEAMLET intervention consisted of: (1) automatic identification of patients with low medication adherence; (2) prompting of medical assistants to screen for barriers to adherence; and (3) clinical decision support to assist providers in addressing those barriers.

Results: We included 1,726 patients seen by 94 providers across ten sites. At baseline, mean medication adherence was 33.2% and mean blood pressure was 149/85. We found no difference between intervention and control groups in change in PDC (18.5% vs 18.2%; p=0.94) or systolic blood pressure (-11.6 vs -12.2 mmHg, p=0.38) at 12 months.

Discussion and Conclusion: An intervention that combined team-based care with automated identification of patients with anti-hypertensive medication nonadherence did not lead to improvements in adherence or blood pressure.

Stakeholder involvement for the interprofessional development and implementation of a medication adherence intervention in rheumatoid arthritis: the Swiss SQUEEZE stakeholder strategy

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Abstract

Aim: The EU-Horizon SQUEEZE project aims to develop, implement, and pilot an eHealth-facilitated integrated care model to improve adherence to disease-modifying antirheumatic drugs in rheumatoid arthritis (RA) at two Swiss rheumatology centres. This sub-study focused on developing a systematic stakeholder involvement strategy to align the intervention and implementation strategies with end-user needs and context-specific characteristics.

Methods: We applied Barkhordarian's seven steps to (1) defining stakeholders, (2) long-listing key stakeholders, (3) mapping to categorise stakeholders into sub-groups, (4) visualizing, (5) verifying stakeholders' availability and commitment, (6) mobilizing and (7) evaluating stakeholder contributions using the PARADIGM Patient Engagement Toolbox.

Results: We identified and grouped 48 stakeholders, including 2 local patients, 11 healthcare professionals, 10 patient-research-partners, 2 IT-specialists, 1 pharmacologist, 1 patient organisation, 1 RA registry representative, 5 clinical leaders, and 16 others (Step 1-3). Based on an influence-interest matrix covering 15 groups, we prioritised engagement strategies and tailored communication through iterative team discussions (Steps 4–5). Involvement strategies included co-creation, regular consultations (monthly to quarterly meetings), ad-hoc meetings and written updates (Step 6). Evaluation will combine quantitative (i.e., surveys, tracking documents) and rapid qualitative methods (i.e., observations, informal conversations, interviews) (Step 7). Preliminary findings indicate high stakeholder satisfaction with suggestions to improve lay language communication.

Discussion and Conclusions: Barkhordarian's seven-step approach enabled the development of a context-specific, theory-informed stakeholder strategy. This process is supporting the development of a relevant, acceptable and feasible care model, and offers a replicable approach for future implementation projects.

Feasibility of implementing e-MEDRESPp, an electronic tool for measuring adherence and use of asthma medications in outpatient asthma clinics of tertiary care hospitals

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Abstract

Background: Adherence to asthma maintenance medications is often low. Physicians face challenges in assessing adherence during medical visits, thereby limiting their ability to prescribe treatment tailored to patients' needs.

Aim: To evaluate the feasibility of implementing e-MEDRESPp, an electronic tool for measuring adherence to maintenance medications, in outpatient asthma clinics of tertiary care hospitals.

Methods: Feasibility was assessed following the implementation of the tool in four outpatient clinics. To evaluate the use of e-MEDRESPp, the number of medical visits during which a respirologist accessed the tool was measured using built-in counters. Patient and respirologist satisfaction with e-MEDRESPp was assessed through questionnaires. In a pre-post analysis, the proportion of days covered (PDC) was calculated to explore the tool's ability to improve adherence.

Results: Thirteen respirologists and 300 patients with asthma were recruited (mean age: 58y ;58% female). e-MEDRESPp was used at least once during a medical visit or on the same day for 80.7% of the patients. Respirologists reported that the tool helped them assess adherence to maintenance medications. 149 patients were contacted for a telephone interview, during which 88.6% reported having discussed their use of asthma medications with their respirologist. A statistically significant improvement of 7.5% [95% CI: 1.7; 13.3] in adherence was observed after implementing e-MEDRESPp among patients whose baseline adherence was below 80%.

Discussion and Conclusion: e-MEDRESPp helps respirologists objectively measure adherence to asthma maintenance medications and better understand the needs of their patients. The study demonstrates the feasibility of implementing e-MEDRESPp and its potential to improve adherence.

Development of a regional referral pathway for older people to the medicines adherence service, from the Northern Ireland Ambulance service

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Abstract

Aim: The Regional Medicines Optimisation in Older People (MOOP) Medicines Adherence Pharmacy team review medicines for older people at home across Northern Ireland (NI). The Northern Ireland Ambulance Service (NIAS) are often 1st responders to older people at home and can identify adherence issues, which may lead to ED attendance. Aim of this study was to assess the impact on patient care (interventions and cost avoidance) of this new referral pathway for NIAS referring to the adherence team. Issues could be unused medications or not taking medication as intended, involving each stage of ABC taxonomy of medication adherence; not started medication, not taking it as prescribed or deciding to stop it.

Methods: Referral pathway set up allowing NIAS to refer, with consent, people ≥65 years, with an identified adherence issue, in each trust area, for a medicines adherence assessment. Pharmacist interventions graded using the Eadon grading scale & ScHARR cost avoidance applied, which defines costs related to Adverse Drug Events (ADEs).

Results: Referrals included multiple unused medicine compliance aids, suboptimal pain management, and confusion with medication. Interventions included blood pressure measuring, deprescribing, optimising medication and supply of adherence aids.
60 interventions Eadon grade 4, 1 grade 5, 1 grade 1-3. Equated to cost avoidance £5678-12867. Time spent by band 8a pharmacist 34 hours at approx. £26.06 per hour cost NI. Invest to save £6.40-£14.52 for every £1 invested.

Discussion and Conclusion: A collaborative pathway between MOOP adherence service and NIAS, led to cost effective improvements in medicines optimisation for older people.