INTENTIONAL NON-ADHERENCE TO MEDICATIONS IN THE ELDERLY – RESULTS FROM A PILOT STUDY (WARSAW, POLAND)

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Abstract: Background Non-adherence is a common phenomenon, which is usually underestimated. The distinction between intentional and erratic non-adherence is important since it requires different actions; however, this issue is rarely addressed in studies. The aim of the study was to assess adherence to long-term medication and the effect of selected factors on the occurrence of intentional non-adherence, including intentional discontinuation of therapy among the elderly. Methods Members of the Warszawa-Wawer University of the Third Age in Warsaw, Poland, over 60 years old were enrolled in the study. Adherence was assessed with the use of the Medication Adherence Rating Scale (MARS). In addition, the Treatment Burden Questionnaire (TBQ) and Euro-Quality of Life Questionnaire (EQ-5D) were used, with a determination of medication information needs, expected medication effect, experienced problems/difficulties, reported concerns, and potential causes of therapy discontinuation. Statistical analysis was performed with the use of STATISTICA software version 13.3. Results Self-reported adherence is underestimated (30% rate among participants); as many as half of the participants allowed self-discontinuation of therapy. Patients burdened with treatment, using numerous medications, should be a priori treated as susceptible to non-adherence. The occurrence of problems and difficulties in relation to therapy may contribute to intentional non-adherence, or even to intentional discontinuation of therapy. Conclusions Non-adherence requires a distinction between different types of non-adherence. Patients should be given information about their medications, according to their needs: their ideas, concerns, and expectations should be verified in order to prevent intentional modification of therapy.

Keywords: non-adherence, elderly, non-persistence, medication review

Elderly people often require the long-term use of multiple medications (1). The condition of optimal treatment is medication adherence, defined as ‘the extent to which a person’s medication-taking behavior corresponds with agreed recommendations from a healthcare provider’ (2). Achieving and/or maintaining adherence among the elderly is highly challenging (3). Non-adherence may be passive and accidental (e.g. forgetting to take a medication dose, misunderstanding) or conscious and intentional (the patient, without consulting a healthcare professional, decides not to start therapy, or to modify or discontinue a recommended therapy) (4). Both phenomena are non-exclusive and may coincide (5, 6). A special type of intentional non-adherence is therapy discontinuation (non-persistence) (4, 7).

In Europe, adherence is too rarely assessed by healthcare professionals (8). The support provided is usually limited to routine information (8), which may be insufficient. Patient-centered encounters including individual needs and conditions of patients would be more desirable (9, 10) since they allow disclosure of patients’ ideas, concerns, and expectations (11). Currently, there is an urgent need for studies on medication non-adherence among older adults, including decision-making processes leading to intentional non-adherence, in order to develop more effective interventions reducing this phenomenon (12).

The aim of the study was to assess adherence to long-term medication and the effect of selected factors (including patients’ ideas, concerns, and expectations related to the prescribed treatment) on the occurrence of intentional non-adherence, including intentional discontinuation of therapy among the elderly. The study was submitted
to the Ethics Committee and received approval (AKBE/170/17).

MATERIAL AND METHODS

The invitation to take part in the study was directed to members of the Warszawa-Wawer University of the Third Age in Warsaw, Poland. 370 members were registered at the university at the time of the study. The inclusion criteria were the age over 60 years and consent to take part in the study. The exclusion criterion was the inability to determine adherence.

Individual meetings with participants took place on 20, 23, and 27 April 2018.

Adherence was assessed with the use of the Medication Adherence Rating Scale (MARS) (13, 14), a self-reported measure of adherence. The MARS has been used in a number of chronic diseases, including elderly patients (15, 16).

Pharmacotherapy burden was assessed with the use of the Treatment Burden Questionnaire (TBQ) – Part 1 – medicines (17, 18). Health was evaluated with the use of the Euro-Quality of Life Questionnaire (EQ-5D) (19, 20).

In addition, questions from “My CHECKLIST at the start of taking my medicine(s)” were adopted (21, 22), in order to determine what the patients would like to know about their medications (medication information needs), expected medication effect, experienced problems/difficulties, reported concerns and possible causes of non-persistence. The questions in „My CHECKLIST” are straightforward, i.e. What would you like to know about this medicine (or medicines)?, What are your expectations of the effects of this medicine or medicines?.

Completed questionnaires were encoded, and the collected material was analyzed with the use of STATISTICA software version 13.3. Logistic regression models were used to determine the associated factors with medication adherence/non-adherence. p-values less than 0.05 were considered statistically significant.

RESULTS

Forty-six subjects wanted to participate in the study, but later 4 subjects resigned. One person did not answer the questions in the MARS questionnaire and was excluded from the study. Finally, responses of 41 subjects (33 females, 80%) were included in the study. The mean age of the study participants was 74.4 ± 5.5 years. Patient characteristics (Table 1) and four dichotomous variables resulting from the responses to the adopted „My CHECKLIST” (21, 22) (encoded as information, action, problems, and concerns) were independent variables adopted in the study.

A detailed analysis of the participants’ responses showed concomitance of intentional non-adherence (patient changes the medication dose, skips a dose, or discontinues the medication) and

| Table 1. Description of the participant characteristics (n=41). |
|---------------------------------------------------------------|
| **Age [median; range]** | 74; 64-89 years |
| **Number of medications for long-term conditions** | | |
| 0-2 | 0 |
| 3-6 | 15 (37%) |
| 7-11 | 12 (29%) |
| 12-22 | 14 (34%) |
| **Adherence (MARS)** | | |
| Non-adherent | 13 (32%) |
| Adherent | 28 (69%) |
| **TBQ – Part 1 – medicines** | | |
| 0 | 17 (41%) |
| 1-10 | 16 (39%) |
| 11-25 | 7 (17%) |
| Missing response | 1 (2%) |
| **EQ-5D-5L** | | |
| **EQ-5D mobility** | mean ± SD | 1.70 ± 0.85 |
| No problems | 21 (51%) |
| Problems | 19 (46%) |
| Missing response | 1 (2%) |
| **EQ-5D self-care** | mean ± SD | 1.07 ± 0.26 |
| No problems | 38 (93%) |
| Problems | 3 (7%) |
| **EQ-5D usual activity** | mean ± SD | 1.12 ± 0.33 |
| No problems | 36 (88%) |
| Problems | 5 (12%) |
| **EQ-5D pain/discomfort** | mean ± SD | 1.90 ± 0.70 |
| No problems | 12 (29%) |
| Problems | 29 (71%) |
| **EQ-5D anxiety/depression** | mean ± SD | 1.63 ± 0.89 |
| No problems | 24 (59%) |
| Problems | 17 (41%) |
| **EQ-VAS** | mean ± SD | 65.5 ± 18.2 |
| median | 68.5 |
| -25% | 50 |
| -75% | 80 |

*TBQ scale relating to medicines: 10-point Numeric Rating Scale, range of stores: 0–40, Higher score = Greater burden
erratic non-adherence (patient forgets to take a dose or misses out on a dose).

Twenty-one study participants (50%) allowed self-discontinuation of the therapy without consultation (mostly due to adverse reactions and/or deteriorated well-being).

Most of the participants (36 subjects, 86%) were interested in receiving information on their medications, mainly their adverse reactions and/or interactions, and they were interested in the overall effects of the medications. Six subjects (14%) were not interested in their medications.

Twelve participants (29%) expressed their concerns with regard to long-term use of their medications (e.g. concerns regarding adverse reactions, addiction, or development of resistance).

The participants’ expectations regarding the medication effects were not always realistic, adequate, or proper.

Fifteen patients (37%) reported adverse reactions.

In order to check factors that could have an effect on medication adherence, three models of logistic regression were developed. Due to the dichotomous nature of the dependent variable, a logit model was estimated with the use of the maximum likelihood method (MLM). Variables having no significant effect on the response variable were omitted. p-values less than 0.05 were considered statistically significant.

In the first model, patients were divided into groups – adherent and non-adherent. The variables having a significant effect on declared adherence included the number of received medicinal products and impaired mobility. Each medicinal product decreased the odds ratio of adherence to therapeutic recommendations on average by 19%. Problems with mobility increased the chance of adherence on average by 88%. The validity of the ex-post estimation is 85.4%.

In the other model, the responses of the study participants provided in the MARS questionnaire and in the adopted form were organized depending on the declared possibility of non-persistence. The odds ratio of non-persistence was growing together with an increased treatment burden by a unit of 23% on average and with the occurrence of patient concerns regarding medication by 503% on average. The validity of the ex-post estimation is 75%.

Finally, the participants were grouped according to responses indicating the occurrence of intentional non-adherence. The odds of intentional non-adherence to therapeutic recommendations increased with an increase in the number of received medicinal products (by 28% on average) and reporting a problem/difficulty related to treatment (by 372% on average), and it decreased with the patient’s age (age increase by one year reduced the odds of intentional non-adherence by 16% on average). The validity of the ex-post estimation is 68.6%.

DISCUSSION

Self-reported medication adherence among study participants was unsatisfactory and remains underestimated since it is based on patient declarations (23). At the same time, half of the patients allowed non-persistence (24), which indicates a necessity of educating patients regarding self-observation and handling worrying symptoms or deteriorated well-being (25, 26).

A detailed analysis of the participants’ responses showed concomitance of intentional non-adherence and erratic non-adherence. The distinction between these two types of non-adherence is important because they have different causes (24), different factors are related thereto, and they require different actions (27, 28).

Behaviors related to non-adherence may have their source in beliefs, concerns, and expectations regarding the prescribed medication (5). The study participants expressed doubts as relates to the efficacy of their medication, and sometimes they had unrealistic expectations about the treatment outcomes. Moreover, they reported concerns and problems which could contribute to deliberate non-adherence (29), or even lead to non-persistence. Less frequently, they reported practical problems which could affect erratic non-adherence (28) (28). This indicates a need for individual medication consultations (30), especially if patients show interest in their medications.

In this study, a correlation between treatment burden and the reported possibility of non-persistence was observed. This correlation is confirmed by other studies indicating that increased treatment burden leads to poor treatment adherence, and in consequence worse treatment outcomes (31, 32). Also, an effect of burden with multiple medications on the occurrence of intentional non-adherence was observed (32, 33).

Limitations

The study included a small, convenient group of subjects interested in their health and
development and involved in the study. That is why results may be different in other groups of patients. Moreover, the assessment of adherence was performed with the use of self-report, instead of objective methods, which further reduces the possibility of result generalization. Nevertheless, the study confirms the necessity of distinguishing between different types of non-adherence and paying attention to patient characteristics which potentially contribute to independent modifications of therapy.

CONCLUSIONS

Thirty percent of the study participants declared non-adherence, both erratic and intentional, where as many as half of the participants allowed self-discontinuation of therapy. Patients burdened with treatment, using numerous medications, should be a priori treated as susceptible to non-adherence.

Adherence to therapeutic recommendations was unsatisfactory in the study sample. In the case of unintentional non-adherence, older patients should be offered individualized methods supporting adherence to therapeutic recommendations. The occurrence of problems and difficulties in relation to therapy may contribute to intentional non-adherence, or even to intentional discontinuation of therapy. Patients should be given information about their medications, according to their needs: their ideas, problems, and concerns should be verified.

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Conflict of interest

The authors declare that they have no conflict of interest.

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