

Self-Reported Adherence: A Method for Evaluating Prescribed Physical Activity in Primary Health Care Patients

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Background: Physical activity on prescription, as a method for increasing physical activity, has attracted attention in recent years. However, few studies have examined adherence as a primary outcome variable. The aim of this article was to examine self-reported adherence to individualized prescribed physical activity in a routine primary health care setting. **Methods:** Patients receiving an individualized physical activity on prescription (FaR) for prevention or treatment of disease were recruited from 13 Swedish primary health care units. Self-reported adherence, physical activity level, readiness to change to a more physically active lifestyle, and well-being were measured with questions at baseline and after 6 months in 240 patients (mean age 51, range 12 to 80, 75% women). **Results:** At the 6-month follow-up a majority (65%) of the patients reported adherence to the prescription. Partial adherence was reported by 19% and nonadherence by 16%. There was a relationship between adherence and well-being and stages of action or maintenance. **Conclusions:** The results demonstrate that adherence to physical activity on prescription is as good as adherence to other treatments for chronic diseases. This is significant because even a small increase in physical activity is important both on an individual level and for public health.

Keywords: clinical research, exercise prescription, health promotion, intervention study, public health, health behavior

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Each year at least 1.9 million people die as a result of physical inactivity,¹ and physical inactivity is one of the 10 greatest risk factors for dying prematurely.² Physical activity on prescription, as a method for increasing physical activity, has attracted attention in recent years.³⁻⁹ Accurate assessment of adherence is necessary for evaluation of methods to promote physical activity, as poor adherence limits the effectiveness of the treatment and, thereby, the possibility to improve patients' health and quality of life.¹⁰ Few intervention studies have examined adherence as a primary outcome variable,¹¹ and there are no validated questions to investigate a patient's own view on adherence to physical activity interventions and no gold standard for assessment of adherence in general.¹⁰ There are also major gaps between research and practice.^{8,12} Randomized controlled trials have shown the efficacy of interventions tested under controlled conditions (focus on internal validity), but there is a need for studies that show the effectiveness of promoting physical activity in everyday clinical practice (focus on external validity).^{12,13} Poor adherence to treatment, including both medications and lifestyle changes, is a worldwide problem. In developed countries, the adherence to long-term therapy for chronic illness averages 50%, and so far the literature has mostly focused on medication adherence.¹⁰ There are several concepts to describe how well a patient follows a prescription or lifestyle advice. Adherence implies the patient's active choice in following medical recommendations, in contrast to passive compliance.¹⁴ In the current study we use the World Health Organization's definition of adherence to long-term therapy: "the extent to which a person's behavior—taking medication, following a diet, and/or executing lifestyle changes, corresponds with agreed recommendations from a health care provider."^{10(p3)}

Physical activity on prescription (FaR) is a rather new method in Sweden for promoting physical activity in insufficiently physically active individuals at risk for or as a treatment of diseases related to physical inactivity. During the implementation phase, 2001 to 2003, of a national project to promote physical activity

on prescription (FaR) in Sweden, the feasibility of the method was studied.¹⁵ Furthermore, the effect of physical activity on quality of life in 481 patients receiving physical activity on prescription was studied in a 6-month follow-up.¹⁶ The current study addresses, in a subsample, adherence to physical activity in routine primary health care settings and the patients' subjective view of their adherence.

The aim of the current study was to evaluate self-reported adherence to individualized prescribed physical activity in patients in primary health care.

Materials and Methods

Adherence to physical activity on prescription (FaR) in routine primary health care setting was investigated in 13 primary health care units in 5 county councils in Sweden. The FaR method of prescribing physical activity and details about the study design have been presented previously.¹⁶ In brief, ordinary primary health care patients who visited a regular health care professional (ie, physiotherapist, medical doctor, or nurse) with the right to prescribe physical activity were considered eligible to be included prospectively in the current study. The health professionals based their judgment of whether an increased physical activity level would be beneficial for the actual health status of the subjects. No fixed inclusion or exclusion criteria, other than that the patients should have diagnoses related to insufficient physical activity or a need to be more physically active to prevent disease, were used. The professionals and the patients agreed together on the suitability of physical activity on prescription. The counseling was intended to be patient oriented and based on *FYSS, Physical Activity in Prevention and Treatment of Diseases*,¹⁷ a Swedish scientific handbook on the effects of physical activity in the prevention and treatment of diseases and how to prescribe physical activity. The prescription procedure also took into consideration the patient's current activity level, activity history, motivation, capacity, and interests.¹⁷ An increased physical activity level was emphasized, and the prescription was not intended to be a beforehand-decided type of physical activity. The prescribed physical activity, that is, lifestyle activities and/or structured exercise, was individualized in regard to type of activity, intensity, frequency, and duration, and it could be either self-monitored or organized by public physical activity organizations. The prescription was written, and the prescription form looked like the ordinary drug prescription form.

Patients receiving FaR answered questions about personal characteristics and physical activity at baseline and at the 6-month follow-up. In the current study we included all patients (N = 240) who reported their adherence to prescribed physical activity at the 6-month follow-up. Subjects gave their informed consent to participate in the study, and the ethical review board in Stockholm approved the project (04-547).

Measurements

To assess the patients' self-reported adherence to prescribed physical activity, they were asked if they adhered to FaR and were thereafter classified in 4 categories, depending on their answers. Group A adhered (answered "I stuck to the prescription"), group B adhered but altered nothing more than the type of physical activity ("I stuck to the prescription but chose another type of physical activity"), group C partly adhered ("I stuck to the prescription at the beginning but not any more"), and group D did not adhere at all ("I did not follow the prescription at all"). Using adherence as a dichotomous variable, groups A and B formed the group that adhered and groups C and D the group that did not adhere. The rationale for letting groups A and B form the adherence group was the importance for subjects to increase their physical activity level according to the agreed intensity, frequency, and duration and not that they stick to the exact same type of physical activity. If the type of suggested physical activity did not suit the patient (eg, did not find the specified activity agreeable, some activities cannot be done during summer or winter [skiing, biking, etc], or group activities that end for the term) this might have called for changing activity.

Changes in self-reported physical activity level at the 6-month follow-up were compared with baseline. An index of total physical activity was created from self-reported physical activity in everyday life and exercise during the last 12 months¹⁸; 4 activity levels were used, ranging from "hardly any physical activity" to "fulfilling public health recommendation for physical activity." The activity levels corresponded to how well the subject fulfills the recommended physical activity level of at least 30 minutes of moderate physical activity at least 5 days a week and/or vigorous physical activity 3 times a week.^{19,20}

To evaluate if the patients adopted or maintained an increased physical activity level, the "stages of change" model was used.²¹⁻²⁴ We used the same question (the Swedish version) that has been used in a Pan-EU Survey aimed at identifying the stage that a patient had reached: precontemplation, contemplation, preparation, action, maintenance, or relapse.^{25,26}

The relationship between self-reported adherence and changes in well-being were investigated by asking about experienced well-being at 6 months compared with before the subjects received their physical activity on prescription. An additional question was included for those whose well-being had improved to evaluate the correlation between changes in well-being and changes in physical activity. To investigate the patients' experiences of receiving FaR, one more question addressing this issue was used. Patients in groups A and B were asked to report the most important reasons for their increased physical activity, while patients in groups C and D were asked why they did not follow the prescribed physical activity.

Table 1 Patient Characteristics and Physical Activity at Baseline for the Whole Sample and by Group of Adherence to Physical Activity on Prescription at 6 Months

Variable	Whole study group (N = 240)	Adhered, group A (n = 128)	Adhered, altered physical activity, group B (n = 28)	Partly adhered, group C (n = 46)	Did not adhere, group D (n = 38)	P
Background Variables						
Age, y, mean \pm SD (range)	51 \pm 13 (12–80)	52 \pm 13 (12–80)	53 \pm 12 (25–75)	48 \pm 11 (25–65)	51 \pm 13 (26–78)	
Sex (female/male)	75/25	73/27	75/25	85/15	71/29	
Civil status						
living alone	19	23	7	13	24	
married/common-law husband/wife	75	71	86	82	71	
other	6	6	7	4	5	
Education						
elementary grade	23	23	32	20	21	
upper secondary school	40	39	39	33	50	
university or college	34	35	29	42	29	
other	3	3	0	4	0	
Main occupation						
working /employed	142	75	14	28	25	
unemployed	6	3	1	1	1	
student	6	5	0	1	0	
retired	49	28	8	4	9	
other	29	19	1	7	2	
Born in Sweden	95	96	96	91	92	
Smoking habits						
never smoked	53	50	59	53	56	
used to smoke	24	27	30	21	11	
current smoker	24	23	11	26	33	
BMI, kg/m ² , mean \pm SD (range)	27.2 \pm 5.5 (17.3–48.9)	27.6 \pm 5.8 (17.3–48.9)	27.1 \pm 5.1 (20.4–40.6)	26.0 \pm 4.7 (20.3–40.6)	27.5 \pm 5.4 (19.0–41.2)	
Percentage with BMI \geq 25	58	61	56	47	65	
Percentage with BMI \geq 30	26	30	22	12	30	
Physical Activity Variables						
Physical activity						< .01
none	7	2	4	18	13	
a few times/week	33	26	43	39	39	
several times/week	25	31	36	13	11	
every day	36	42	18	30	37	
Exercise						
hardly anything	7	3	7	7	18	
hardly anything, but occasional walking	30	26	29	39	32	
light activity at least once a week	45	49	43	46	34	
moderate activity at least once a week	17	21	21	7	16	
heavy activity on a regular basis	1	1	0	2	0	
Total physical activity level ^a						<.001

(continued)

Table 1 (continued)

Variable	Whole study group (N = 240)	Adhered, group A (n = 128)	Adhered, altered physical activity, group B (n = 28)	Partly adhered, group C (n = 46)	Did not adhere, group D (n = 38)	P
hardly any physical activity	8	2	4	17	21	
some physical activity could be more physically active	32	27	46	41	29	
fulfilling public health recommendation of physical activity	49	58	39	37	42	
Readiness for change to a more physically active lifestyle	10	13	11	4	8	
precontemplation	2	2	0	2	3	
contemplation	19	17	14	24	24	
preparation	45	40	46	53	50	
action	4	6	4	7	0	
maintenance	14	17	21	9	8	
relapse	12	15	11	4	13	
do not know	3	4	4	0	3	

Variables are presented as proportions (percentage) or means with standard deviation, and as numbers for main occupation. *P* values are presented when significant differences were found between the adherence groups. Group A: adherence group. Group B: adherence group that altered nothing more than the type of physical activity. Group C: partial adherence group (followed the prescription in the beginning but did not do so after 6 months). Group D: nonadherence group.

^a Index calculated from physical activity and exercise. Corresponds to how well the subject fulfills recommended physical activity level, ie, at least 30 minutes of moderate physical activity at least 5 days a week (preferably every day) and/or vigorous physical activity 3 times a week.^{19,20}

Statistics

Continuous variables are presented as mean and SD. Categorical variables are presented using the frequency and the relative frequency. Analyses for differences between groups at baseline were performed using Kruskal–Wallis and Mann–Whitney (post hoc comparisons) for ordinal data and the chi-square test for categorical data. Change between baseline and follow-up was tested using Wilcoxon's signed-rank test; changes in physical activity, exercise, and well-being were further categorized into 3 levels: increase, no change, and decrease. The relation between self-reported adherence (4 groups) and the change from baseline to follow-up in other variables was tested using the chi-square test. The level of statistical significance was set at $P < .05$, but for comparisons between groups at baseline a $P < .01$ was used to avoid the problems with multiple testing. All the statistical analyses were 2-sided and performed with Intercooled Stata 9.0 for Windows (Stata Corp).

Results

Patient characteristics, physical activity, and well-being at baseline for adherence groups A to D are presented in Table 1. No significant differences were detected in patient characteristics, but differences in physical activity in everyday life and total physical activity were seen.

Self-Reported Adherence to Prescription

A majority (65%) of the patients receiving FaR reported that they adhered to the prescription; 53% adhered fully (group A, $n = 128$) and 12% adhered but altered nothing more than the type of physical activity (group B, $n = 28$). Partial adherence (group C, $n = 46$) was reported by the 19% that initially followed the prescription but had ceased to do so by the time of follow-up, while the remaining 16% reported total nonadherence (group D, $n = 38$).

Compared with number of subjects in the 6-month follow-up questionnaire ($n = 298$), there was an internal dropout of 58 patients in the question regarding adherence, and all missing data in the follow-up questionnaire were assumed to be nonadherents for the intention-to-treat analysis. The adherence rate at follow-up for the entire population was 52% (156/298).

Adherence in Relation to Physical Activity

Self-Reported Physical Activity Level. Relations between changes from baseline to follow-up in self-reported physical activity level and self-reported adherence are presented in Table 2.

Self-reported physical activity in everyday life increased significantly from baseline to follow-up in all 4 groups (A, $P < .001$; B, $P < .01$; C, $P < .001$; and D, $P < .05$). Significant differences were also found between

Table 2 Frequency and Relative Frequency (Percentage) in Self-Reported Adherence Against Changes in Self-Reported Physical Activity Level From Baseline to 6-Month Follow-Up

	Adhered, group A (n = 128)	Adhered but altered physical activity, group B (n = 28)	Partly adhered, group C (n = 46)	Did not adhere, group D (n = 38)
Change in physical activity in everyday life				
increase	37 (29%)	15 (54%)	20 (44%)	13 (34%)
no change	76 (60%)	10 (36%)	22 (49%)	22 (58%)
decrease	14 (11%)	3 (11%)	3 (7%)	3 (8%)
Change in exercise				
increase	50 (40%)	8 (29%)	20 (44%)	11 (30%)
no change	69 (56%)	16 (57%)	23 (51%)	24 (65%)
decrease	5 (4%)	4 (14%)	2 (4%)	2 (5%)
Change in total physical activity level ^a				
increase	43 (35%)	11 (39%)	24 (53%)	12 (33%)
no change	72 (58%)	13 (46%)	20 (44%)	23 (62%)
decrease	9 (7%)	4 (14%)	1 (2%)	2 (5%)

^a Index calculated from physical activity and exercise. Corresponds to how well the subject fulfills recommended physical activity level, ie, at least 30 minutes of moderate physical activity at least 5 days a week (preferably every day) and/or vigorous physical activity 3 times a week.^{19,20}

the adherence groups ($P < .05$); increased everyday activity was reported by 29% in group A, 54% in group B, 44% in group C, and 34% in group D.

Exercise increased significantly from baseline to follow-up in groups A ($P < .001$), C ($P < .001$), and D ($P < .05$) but not in group B ($P = .18$). No significant differences could be detected between the adherence groups; 40% in group A reported an increase in exercise, as did 29% in group B, 44% in group C, and 30% in group D.

Total physical activity increased significantly from baseline to follow-up in groups A ($P < .001$), C ($P < .001$), and D ($P < .01$); a borderline P value of .053 was seen in group B. There were no significant differences between the adherence groups in total physical activity. An increase in total physical activity was reported by 34% in group A, 39% in group B, 53% in group C, and 33% in group D. In all groups there was an approximately 10% increase between baseline and follow-up in the proportions fulfilling the criteria for public health recommendation of physical activity. The proportions reporting fulfilling public health recommendation of physical activity level at follow-up were 25% in group A, 21% in group B, 16% in group C, and 19% in group D.

Readiness for Change. Figure 1 shows shift from baseline to follow-up in readiness for change in physical activity, separated by adherence group. Adherence group A showed a significant shift from the stages of preparation and relapse toward action and maintenance.

Table 3 presents the relation between self-reported adherence and a shift between baseline and follow-up to the stages of action or maintenance of a physically active lifestyle. Significant differences were found between the adherence groups in the increase in the

stages of action or maintenance ($P < .05$); an increase in either of these stages was reported by 45% in group A, 35% in group B, 23% in group C, and 29% in group D.

An improvement in readiness to change (moved from lower readiness to higher stage, ie, to either preparation, action, or maintenance) was seen in 48% of the subjects in group A and 42% in group B, compared with 29% in group C and 23% in group D. A negative shift in readiness to change (moved from higher to lesser stage) were seen in 7% of the subjects in group A, 12% in group B, 11% in group C and 28% in group D. Twenty percent in group A remained in the stages of action or maintenance, as did 19% in group B, 5% in group C, and 7% in group D. The result in the adherence groups together (groups A and B) was 40% improvement in stages of change (47% improved and 8% declined), compared with 6% (26% improved and 20% declined) in those that did not adhere at follow-up (groups C and D).

At follow-up 66% in group A and 54% in group B were physically active, that is, in the stages of action or maintenance. Corresponding figures were 34% in group C and 32% in group D.

FaR and Well-Being. The adherence groups differed significantly in well-being 6 months after FaR ($P < .05$). Nearly 60% in both group A and group B experienced increased well-being at 6 months compared with baseline (Table 4). In the groups that did not adhere to FaR, 44% (group C) and 25% (group D) experienced increased well-being. Increased well-being was thought to be connected to increased physical activity by 99% in group A, 94% in group B, and 89% in groups C and D.

Patients' Experience of FaR. Nearly all patients had a positive experience of receiving FaR at the 6-month follow-up (see Table 4). Most patients in group A (70%)

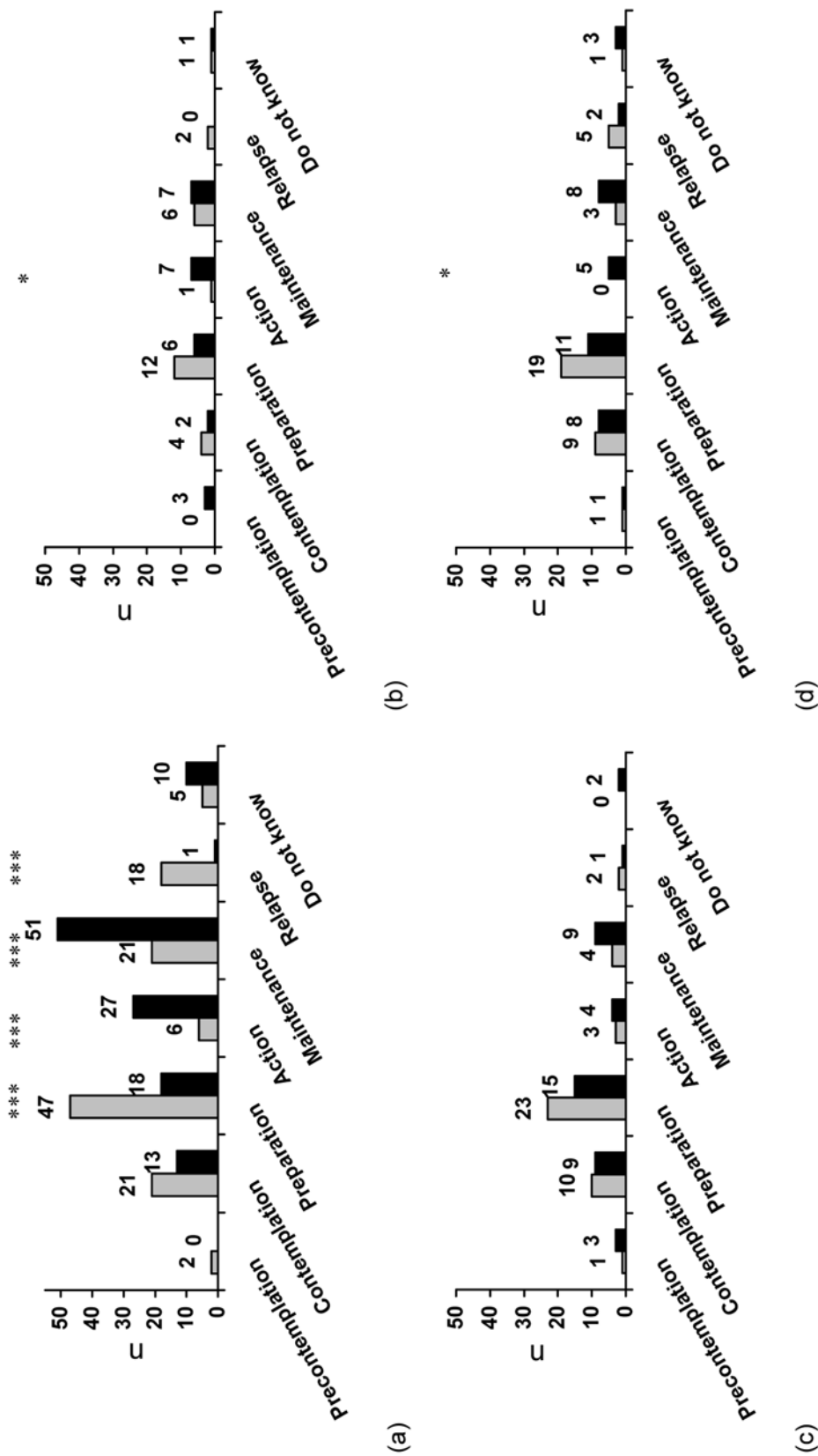


Figure 1 — Stages of change at baseline (gray bars) and 6 months (black bars) after the prescribed physical activity, separated by adherence group. (a) The group that reported that they adhered to the prescription (n = 128). (b) The group that reported that they adhered to the prescription but altered nothing more than the type of physical activity (n = 28). (c) The group that reported that they followed the prescription at the beginning but did not do so after 6 months (n = 46). (d) The group that reported that they did not follow the prescribed physical activity at all (n = 38). Significant differences between baseline and the 6-month follow-up are indicated with asterisks, *****P* < .001 and ****P* < .05.

Table 3 Frequency and Relative Frequency (Percentage) in Self-Reported Adherence Against Shift to the Stages of Action or Maintenance of Physically Active Lifestyle From Baseline to 6-month Follow-Up

	Adhered, group A (n = 128)	Adhered, altered physical activity, group B (n = 28)	Partly adhered, group C (n = 46)	Did not adhere, group D (n = 38)
Shift to the stage of action of a physically active lifestyle				
increase	24 (20%)	7 (27%)	4 (9%)	5 (13%)
no change	93 (78%)	18 (69%)	36 (84%)	33 (87%)
decrease	3 (2%)	1 (4%)	3 (7%)	0
Shift to the stage of maintenance of a physically active lifestyle				
increase	30 (25%)	2 (8%)	6 (14%)	6 (16%)
no change	90 (75%)	23 (88%)	36 (84%)	31 (82%)
decrease	0	1 (4%)	1 (2%)	1 (3%)

and group B (48%) reported very positive experiences. A fairly positive experience was reported by 44% in group B and by most patients in group C (56%) and group D (50%). A significant difference was found between the adherence groups ($P < .001$).

Reasons for Adherence and Nonadherence. Table 4 presents the reported reasons for starting to be more physically active (groups A and B) and the main reasons for nonadherence (groups C and D).

Discussion

This study examined self-reported adherence to individualized prescribed physical activity in a routine primary health care setting. Patients with a need to increase their physical activity level to improve their health agreed on suitability of physical activity on prescription and an appropriate activity, in consultation with a regular health care professional. Most (65%) of the patients receiving physical activity on prescription in a routine primary health care setting reported adherence to the prescription after 6 months. In the light of the fact that many patients with chronic conditions (eg, diabetes or hypertension) have difficulties in adhering to their recommended regimes—adherence averages 50%¹⁰—the main finding in our study indicates that adherence to FaR is as good as or even better than adherence for drugs and other treatments in chronic diseases. Our results have clinical implications, because there is a lack of methods in everyday clinical setting to assess the extent to which a person's behavior, taking medication and/or executing lifestyle changes, corresponds with agreed-on recommendations from a health care provider. Physical activity is also a complex behavior; people normally are always physically active to some degree. Even people that fulfill the public health recommendation of physical activity level (10% at baseline in our study) may need to increase their physical activity

to prevent or treat a disease. Our simple question, where patients stated whether they adhere to prescribed physical activity, fulfills several criteria for use in real-life settings: it is easy to use and not time-consuming or expensive.

The agreements of self-reported adherence were tested with indirect measurements of adherence: changes in physical activity and change in well-being. We used stages of change to measure physical activity level, as different stages are associated with different levels of physical activity.^{23,24} Movement from one stage to another was positively related to adherence. As stage progressed, patients reported better adherence and an increase in physical activity level was seen. A significant shift to the stage of action or maintenance indicated adherence to FaR, and individuals in the stages of action or maintenance are usually physically active at moderate or higher intensity.^{27–29} Although the self-reported physical activity level increased significantly between baseline and follow-up, there were no distinct differences found between the adherence groups. This might partly be explained by the fact that group A reported higher physical activity level at baseline, which could aggravate the possibility of an increase in this group compared with the other groups. Patients reporting adherence tended to fulfill the recommended physical activity level to a higher extent at follow-up. Because behavior changes such as increased physical activity level have to be taken step by step (ie, a successive increase) even people that do not fulfill the recommended activity level can adhere to the prescribed physical activity level. Even a small increase in physical activity may have an important impact on a patient's health. Differences in well-being and a more positive experience of receiving FaR also showed a relation with self-reported adherence. The difficulties with assessing physical activity level³⁰ in clinical practice illustrate a need for simple methods to evaluate treatment and preventive efforts. The relation between self-reported

Table 4 Patients' Experienced Well-Being 6 Months After Physical Activity on Prescription (FaR), Reason for Adherence or Nonadherence to FaR, and Experience of Receiving FaR

	Adhered, group A (n = 128)	Adhered, altered physical activity, group B (n = 28)	Partly adhered, group C (n = 46)	Did not adhere, group D (n = 38)
Experienced well-being at 6 months compared with before FaR				
increased	59%	57%	44%	25%
no change	39%	39%	49%	66%
decreased	2%	4%	7%	9%
If increased, was the increased well-being connected to the increased physical activity level?				
yes	99%	94%	89%	89%
no	1%	6%	11%	11%
Reason for adherence (n)				
existing decision before coming to the appointment which then strengthened the decision to action	73	32		
counseling	68	16		
prescription	65	15		
increased knowledge	28	12		
contacted by leisure service personnel	15	3		
other reasons ^a	18	10		
Reason for nonadherence (n)				
illness			20	14
not enough time			16	8
not a suitable type of physical activity			5	7
lack of motivation			6	6
other reasons ^b			21	18
Experience of receiving physical activity on prescription				
extremely positive	70%	48%	36%	33%
fairly positive	28%	44%	56%	50%
no opinion	2%	7%	9%	14%
fairly negative	1%	0%	0%	3%
awfully negative	0%	0%	0%	0%

^a Other reported reasons for adherence were related to the subject's health status and the reason for the prescription, such as getting rid of pain and stiffness, being given help with finding suitable strength or mobility exercises, or having enough time to start due to sick leave.

^b Other reasons for nonadherence mainly consisted of the organized group exercise having ended for the term, family or financial reasons, improvement or deterioration in the health problem, or tiredness. Some reported that they found other kind of physical activities by themselves or that they were not contacted by the public physical activity organizations.

adherence and shift to higher physical activity level and increased well-being suggests that self-reported adherence could be a suitable way to assess the penetration of lifestyle counseling such as FaR.

The reported reasons for adherence were mainly related to the method of FaR, that is, the counseling and the written prescription. On the other hand, the reasons for nonadherence could be related to a lack of knowledge

and motivation, as the patients reported illness and lack of time as the most important reasons.

Some limitations should be taken into consideration. Data on how many patients visited the primary health care centers during the study year were not available. It can also be argued that there might have been a selection bias for more motivated patients, as the patients were not randomized to treatment or not. However, the

method of FaR might have its best potential for people in the stages of contemplation or preparation for increased physical activity or those who have relapsed in an earlier attempt. People in the stage of precontemplation are not ready for change yet and should therefore not be forced to receive FaR. To compensate for the dropouts, we also calculated the adherence with an ITT analysis, that is, of all patients prescribed FaR who were available at the 6-month follow-up, with the results of adherence to FaR of 52% in the long term. Although this gave us a lower adherence rate, it is still important from a public health view. The high proportion of women (75%) in this study is similar to other studies^{3,4} and reflects the fact that more women than men visit primary health care units.

Testing adherence to FaR in the clinical setting strengthens the external validity.^{12,13} Methods like FaR have received increased attention during the last decade. However, only 30% of patients visiting health care system over the past year in Sweden reported that they had discussed lifestyle issues with doctors or nurses, and only between 20% and 40% of these (depending on county council) received a prescription for physical activity (ie, FaR).³¹ This illustrates the implementation problems of new methods in the health care setting, as well as the gap between efficacy trials and the use of physical activity counseling and FaR in routine health care, despite the fact that physical activity is the evidence-based treatment known to be the most effective and entailing the fewest side effects or risks in several chronic diseases.^{8,32} Placing the focus on effectiveness instead of efficacy will facilitate the translation of research into health promotion practice.³³

Although accurate assessment of adherence is necessary for evaluation of the best method of promoting physical activity in primary health care, there is no gold standard to measure adherence, and knowledge about patients' self-reported adherence is sparse.¹⁰ A good assessment method should also be suitable for clinical use; that is, it should be easy to use and not time-consuming or expensive. It seems possible to measure adherence with a simple question, as increased physical activity (an improvement in stages of change and a shift toward action and maintenance) and increased well-being were related to self-reported adherence in the current study. As assessment of physical activity level has several known limitations, and in primary health care practice it can be difficult to assess small but clinically significant changes, the use of a simple question like the one used in the current study is encouraging. Self-reported adherence can be a suitable measure for follow-up at return visits or during telephone calls and could be used to complement short questions concerning physical activity level, as a patient may have changed his or her activity pattern despite maintaining the same physical activity frequency.

In conclusion, this work has significant importance for the implementation of lifestyle recommendations in general and physical activity recommendations in particular in primary care practices. Our results indicate that adherence to physical activity on prescription is 65% and as good as adherence to pharmacological and other treatments of chronic diseases, as reported by the World Health Organization. Self-reported adherence can be a suitable measure for follow-up at return visits or during telephone calls and could be used to complement short questions concerning physical activity level, as a patient may have changed his or her activity pattern despite maintaining the same physical activity frequency. This is significant, as even a small increase in physical activity is important both on an individual level and for public health. However, further investigation is needed to develop validated measurements of adherence to lifestyle counseling, as well as to test self-reported valuation of adherence in studies under more controlled conditions.

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