Combination antiretroviral therapy among immigrant and indigenous HIV infected patients: quality of life and treatment adherence

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Short communication
Self-reported adherence is more predictive of virological treatment response among patients with a lower tendency towards socially desirable responding

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Abstract

Background: Self-report is the most commonly used measure of adherence to highly active antiretroviral therapy, but typically shows weaker associations with virological treatment outcome than more objective adherence assessment methods. Socially desirable responding may hamper the validity of self-reported adherence. We investigated if stratifying patients according to their socially desirable response set may improve the prediction of virological treatment response by self-reported adherence.

Methods: Patients enrolled in the focus group of the Dutch national cohort ATHENA completed a social desirability scale, four self-report adherence questions, and had their plasma HIV type-1 RNA concentrations measured. We calculated odds ratios and 95% confidence intervals for self-reported non-adherence to predict HIV-1 RNA>50 copies/ml among patients with a lower or a higher tendency towards socially desirable responding.

Results: A total of 331 patients were included. Self-reported non-adherence was significantly predictive of HIV-1 RNA>50 copies/ml on three out of four questions among patients with lower socially desirable responding (n=198). Self-reported non-adherence did not predict HIV-1 RNA>50 copies/ml among patients with higher socially desirable responding (n=132).

Conclusions: Stratifying patients according to their socially desirable response set improved the prediction of virological treatment response by self-reported adherence. This finding emphasizes the importance of discussing medication adherence in a non-threatening and non-judgemental way that normalizes non-adherence to reduce socially desirable responding.

Key-words: Adherence; Compliance; Social desirability bias; Highly active therapy; Self-report; Virological treatment response.
good listener’ and ‘There have been occasions when I took advantage of someone’. The items have five response options, ranging from ‘definitely true’ to ‘definitely false’. Scale scores are linearly transformed to a 0–100 score distribution.

Adherence to HAART was assessed using four questions. Patients were asked to estimate the percentage of prescribed anti-HIV-1 medications that they took during the past week and during the past month (response options ranging from 1= less than 30% to 9= 100%), and on how many days in the past week (response options ranging from 1= not 1 day to 5= all 7 days) and in the past 2 days (response options were ‘yesterday’, ‘the day before yesterday’, ‘yesterday and the day before yesterday’, and ‘none of those days’) they took all anti-HIV-1 medicines that were prescribed.

Data analyses
We selected patients who completed the SDRS and the adherence questions, and in whom plasma HIV-1 RNA concentrations were measured within 6 months. We dichotomized the SDRS at the median to distinguish between patients with lower and higher socially desirable responding because of a skewed distribution and because we aimed to investigate if there was a stronger association between self-reported adherence and virological treatment response among patients with a lower compared with a higher tendency towards socially desirable responding. We dichotomized the adherence questions at the median to distinguish between patients with higher and lower levels of adherence. We dichotomized plasma HIV-1 RNA concentrations into HIV-1 RNA≤50 copies/ml or versus HIV-1 RNA>50 copies/ml. We calculated the percentages of patients reporting lower adherence, for the group with lower and higher social desirability, respectively, and compared these percentages using χ2 tests. For the lower and higher social desirability group, we calculated odds ratios and 95% confidence intervals for patients with self-reported lower adherence to have HIV-1 RNA>50 copies/ml. Analyses were conducted using SPSS version 16 (SPSS Inc., Chicago, IL, USA).

Results
A total of 331 patients completed the questionnaire and had a plasma HIV-1 RNA measurement available. Patients providing a socially desirable response to ≤1 item of the SDRS were categorized as the lower social desirability group because this was the scale median. Patients reporting perfect adherence were categorized as the higher adherence group because this was the scale median. The characteristics of patients in the lower and higher social desirability group are shown in Table 1.

The percentages of patients reporting not taking 100% of prescribed antiretrovirals (ARVs) during the past week, not taking 100% of prescribed ARVs during the past month, not taking ARVs on each day during the past week, and not taking ARVs on each of the past 2 days were 16%, 31%, 10%, and 6%, respectively, for patients in the lower social desirability group, and 10%, 18%, 8%, and 2%, respectively, for patients in the higher social desirability group. Although higher percentages of patients self-reported non-adherence in the lower social desirability group, this difference was statistically significant only for not taking 100% of prescribed ARVs during the past month (P=0.012).

Figure 1 shows the odds ratios and 95% confidence intervals for patients with self-reported non-adherence to have HIV-1 RNA>50 copies/ml. Three of these odds ratios were statistically significant for the lower social desirability group (that is, the confidence intervals did not include one), whereas none of these odds ratios were statistically significant for the higher social desirability group.

Table 1: Patient characteristics at the time of completion of the questionnaire.

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Lower social desirability group (n = 198)</th>
<th>Higher social desirability group (n = 132)</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male gender, %</td>
<td>91</td>
<td>88</td>
<td>0.36</td>
</tr>
<tr>
<td>Mean age, years (±SD)</td>
<td>45 (9)</td>
<td>45 (10)</td>
<td>0.50</td>
</tr>
<tr>
<td>Mean duration of HAART, years (±SD)</td>
<td>4.6 (1.7)</td>
<td>4.7 (1.6)</td>
<td>0.54</td>
</tr>
<tr>
<td>ARV-naive at HAART initiation, %</td>
<td>29</td>
<td>34</td>
<td>0.31</td>
</tr>
<tr>
<td>Plasma HIV-1 RNA&gt;50 copies/ml, %</td>
<td>19</td>
<td>24</td>
<td>0.37</td>
</tr>
<tr>
<td>Median CD4 T-cell count at HAART initiation, cells/mm3 (IQR)</td>
<td>240 (107-400)</td>
<td>210 (81-380)</td>
<td>0.29</td>
</tr>
</tbody>
</table>

ARV, antiretroviral; HAART, highly active antiretroviral therapy; HIV-1, HIV type-1; IQR, interquartile range.
Discussion

As expected, self-reported adherence was more predictive of virological treatment response among patients with a lower compared with a higher tendency towards socially desirable responding in the present study. This finding suggests that social desirability influences the validity of self-reported adherence.

It thereby adds to a large body of evidence showing the influence of social desirability on self-reported adherence to medications for other conditions than HIV-1 infection, and on other self-reported health-related behaviours.[9]

The use of general social desirability questionnaires has limitations. These questionnaires assume that if patients respond in a socially desirable manner to the items, they are most likely to respond in a similar socially desirable manner to items of another questionnaire, which might not necessarily be true. Another limitation is that there might be genuine differences between individuals in terms of the degree to which they comply with social norms, including adherence to treatment regimens. Social desirability questionnaires might thereby confound true differences between individuals in terms of their social desirability. Despite these potential limitations, we found a different prediction of virological treatment response by self-reported non-adherence among patients with higher and lower levels of socially desirable responding.

Socially desirable responding is considered to be, in part, a respondent characteristic and, in part, an item characteristic. Individuals vary in their tendency to give socially desirable responses and questions differ in their capacity to elicit social desirable responses. It would be interesting to learn to what extent patients change their responses to social desirability measures in longitudinal studies.

Our findings have implications for both researchers and health care providers. First, stratifying patients according to their socially desirable response set may improve the prediction of virological treatment response by self-reported adherence. Second, our results emphasize the need for further research aimed at diminishing social desirability bias on self-report measure of adherence to HAART. Third, our findings emphasize the importance discussing medication adherence in a non-threatening and non-judgemental way to reduce socially desirable responding.

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Reference List


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