



**Karolinska  
Institutet**

**Department of Public Health Sciences**

**Enhanced Antiretroviral Treatment Support in relation to quality of life and  
virological failure in low-income setting:**

**A cluster randomized controlled trial in Quang Ninh, Vietnam.**

**ACADEMIC DISSERTATION**

For the degree of PhD at Karolinska Institutet  
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# ABSTRACT

**Background** Antiretroviral therapy (ART) has become more widely available in Vietnam since 2005. However, up to now, very little is known about characteristics of people living with HIV (PLHIV) at ART initiation including factors influencing ART adherence. On the other hand, scaling up HIV care in Vietnam faces challenges, including shortages of health care personnel willing to work with HIV-infected individuals resulting in heavy workloads and constrained support to patient adherence. To counter this, community-based peer support interventions have sought to improve adherence to ART, to lessen internal HIV-related stigma as well as to improve treatment outcomes.

**Aim** The overall aim of this thesis is to assess the effect of enhanced treatment support on treatment outcomes including Immunological and Virological failure as well as Quality of Life among PLHIV on ART in, Quang Ninh, Vietnam. The aim of study (paper) I was to explore factors influencing adherence to antiretroviral therapy and to assess possible intervention strategies to enhance ART adherence. The aim of study II was to describe patient characteristics at baseline with an emphasis on sero-discordance among married patients. The aim of study III was to assess the impact of peer support on quality of life after one year follow up. The aim of study IV was to assess the effect of the peer support intervention on adherence as well as immunological and virological failure after 2 years of follow up.

**Methods** Data for the thesis was collected in Quang Ninh, a province in Northern Vietnam, and was organized into four studies (I-IV). In study I a qualitative approach was used through focus group discussions with persons living with HIV and their family members. Based on the findings from study I, an intervention strategy was developed engaging PLHIV to support adherence, peer support, with home visits twice a week the first two months and thereafter weekly. Study II, III and IV were based on a cluster randomized controlled trial to assess the effect of peer support on quality of life (QOL) as well as adherence, immunological and virological treatment failure among 640 PLHIV initiating ART in 4 districts in Quang Ninh. In study II, a baseline structured questionnaire was used to assess characteristics of patients initiating ART. In study III a structured questionnaire was used to assess QOL (WHOQOL-HIVBREF) which was conducted every four months. In study IV the adherence assessment was done using a modified AACTG structured questionnaire which was carried out every 3 months, immunological and virological failure were assessed using CD4 count and viral load (Exavir Load) every 6 months

**Findings** In study I, stigma was described as the main barrier to ART adherence, causing patients to delay their ART medications of fear of unintentional disclosure. The preferred support to enhance adherence among patients was community-based peer-support by other PLHIV who had received sufficient training. Study II showed that PLHIV initiating ART in Quang Ninh generally had severe immunosuppression and males presented with more severe immunosuppression than females. Of male patients, the majority (70%) reported a history of heroin use and HIV transmission through sharing needles, among females the majority reported sexual transmission (95%). The sero-discordance rate among the married patients was in total 58%, significantly higher among men compared to women (71% vs. 18%). Factors associated with a high rate of sero-discordance were injection drug use (IDU) history, tuberculosis (TB) history and the availability of voluntary counseling and testing (VCT) in residential locations. High sero-concordance was associated with college/university education. In study III, there was a significantly higher QOL rating in the peer support intervention group compared to the control group after 12 months follow up among patients who were enrolled on ART with severe immunosuppression but not for patients enrolled with mild or no clinical symptoms. The peer support intervention did not have any effect on Internal AIDS-related stigma. Study IV showed no significant difference between intervention and control group on self-reported adherence, virological and immunological failure rates after 2 years of follow up. High VL at baseline is a predictor for both VL failure and CD4 trends (IV).

**Conclusions:** Stigma is reported to be a main obstacle to HIV treatment adherence. To prevent HIV transmission among sero-discordant couples measures should be taken including increased information, provision of condoms as well as ART to the HIV positive partner regardless of CD4 count. Peer support has a positive impact on QOL among patients initiating ART severely immune-compromised. Peer support did not show any significant effect on self-reported adherence, virological and immunological failure rates after 2 year of follow up. The results suggest adherence support measures for PLHIV on ART should be contextualized according to individual, clinical and social needs.

**Key words:** *HIV, ART, Stigma, peer support, sero-discordance, cluster randomized controlled trial, Quality of life, virological failure, Quang Ninh, Vietnam.*