Limitations of this thesis

According to Simon TL, unless donors are taking iron supplementation regularly, even two donations per year is associated with a 28% incidence of iron deficiency.\textsuperscript{[11]} So it is required to follow the donors' iron status after every donation. This is possible when the same donor comes to donate the blood at the same place again and again. In our setup, it was not possible to follow the same donor back because the majority of donations were in camps organized by various NGOs.

As the data analysis of the study is based on the history collected from the blood donation form available in the blood bank. Regarding donor history particularly in terms of times of donation and the period of last donation, there are high chances of subjective error from the donor side as well as from the person who is collecting the history. This is possible again if the same donor comes to donate at the same place again and again or if there can be a unique online donor registry format available to keep the data of all individual donors which is available in and updated regularly by all blood banks. So that we can able to get the correct information about the donors in terms of his frequency of donation and the donation interval. Currently, we don’t have that facility, so may be in future we might get the actual data.

The study is based on analysis of multiple parameters for detection of iron status of donors, there can be multiple factors affecting the analysis particularly the individual laboratory variables for measuring various iron tests, in person variables in different
human being particularly the ferritin level. Kit variable may also affect the result of biochemical parameters. Methodological bias may complicate the comparison of different measurements.

- Measurements of Hb and serum ferritin have been described in other studies as not sufficient to detect iron deficiency in blood donors.\textsuperscript{[43,124]} The reasons are the wide reference interval for both tests and the increase of serum ferritin caused by acute phase reactions as inflammation. Given the inaccuracy of Hb and serum ferritin to detect early signs for iron deficiency and the transition to iron deficient erythropoiesis, it was of interest to examine the diagnostic potential of alternative iron status markers.\textsuperscript{[144]} Either sTfR or CHr may be valuable supplementary tests in women with borderline values of Hb and serum ferritin, which is often the case when recruiting new young female donors. Elevation of sTfR is a sensitive indicator of iron deficient erythropoiesis, while fall in serum ferritin is a marker of iron deficiency and depleted iron stores.\textsuperscript{[124]} Combined in the TfR-F index (sTfR / log of serum ferritin), these indicators have been suggested to increase the diagnostic sensitivity of iron deficiency with or without concomitant anaemia.\textsuperscript{[125, 229]} In our setup it was not possible to test for this marker, that is the limitation of study.

- HPLC could have been done on more number of samples but due to cost constraint it has limited to the few samples with high suspicion on the basis of application of Mentzer index on data.
If the serum ferritin level is tested some of the donors with hereditary hemochromatosis can be picked up and that subjects may be eligible as blood donors if they are otherwise accepted according to inclusion criteria. These subjects may safely be advised to donate blood four times per year and sometimes even more often, depending on their actual iron status. Subjects with high serum ferritin concentration and HFE gene variant may be useful donors. However, as in our set up we don’t have facility to confirm such cases that was a limitation of the study.