

Non-alcoholic fatty liver disease (NAFLD) integration into India's NCD program – Obstacles and solutions for the implementation of guidelines at the national level

Kanica Kaushal

Department of Clinical Research and Epidemiology, Institute of Liver and Biliary Sciences (ILBS), New Delhi, India

ABSTRACT

Individuals who have non-alcoholic fatty liver disease (NAFLD) are at high risk of metabolic comorbidities and can put a significant strain on healthcare systems. If not managed in a timely manner, NAFLD can lead to sustained healthcare costs, economic losses, and reduced health-related quality of life. In India, the Ministry of Health and Family Welfare recognized the need for a comprehensive approach to prevent NAFLD and integrated public health measures into the existing National Program for Prevention and Control of Non-Communicable Diseases (NP NCD). However, 3 years after the integration, there is no clear measure of the extent of implementation of this program, and the exact facilitators and barriers to implementing the program are yet to be determined. The next step toward providing comprehensive and effective healthcare services to those affected by NAFLD is the implementation of NAFLD guidelines under the NP NCD. The article emphasizes the importance of replacing old reporting formats with updated ones that incorporate NAFLD. It also highlights the need for healthcare personnel and community health workers to receive multiple trainings. While measuring waist circumference (WC) and identifying patients who need referral poses challenges, we can overcome them by updating the Non-Communicable Disease (NCD) application to include NAFLD, recording WC in registers, and using up-to-date reporting formats.

Keywords: Implementation, India, integrated NCD programs, interventions, non-alcoholic fatty liver disease (NAFLD)

Introduction

Non-alcoholic fatty liver disease (NAFLD) is now estimated to affect a quarter of the world's adult population^[1] and is one of the most important causes of liver disease worldwide. It will probably emerge as the leading cause of end-stage liver disease in the coming decades, with the disease affecting both adults and children.^[2,3] The epidemiology and demographic characteristics of NAFLD vary worldwide, usually parallel to the prevalence of obesity, but a substantial proportion of patients are lean^[1] as well.

Address for correspondence: Dr. Kanica Kaushal,
Department of Clinical Research and Epidemiology, Institute
of Liver and Biliary Sciences (ILBS), New Delhi, India.
E-mail: kanicak8@gmail.com

Received: 19-03-2024

Revised: 11-05-2024

Accepted: 27-05-2024

Published: 11-09-2024

Access this article online

Quick Response Code:



Website:

<http://journals.lww.com/JFMPC>

DOI:

10.4103/jfmprc.jfmprc_458_24

NAFLD is an independent risk factor for several other diseases, including type 2 diabetes mellitus (DM)^[4] and cardiovascular and cardiac diseases.^[4] It is a multisystem disease^[5] that requires a multidisciplinary, holistic approach to its management.^[6]

Individuals with NAFLD have a high risk of metabolic comorbidities and place a growing strain on healthcare systems from their need for management. If not managed on time, NAFLD results in sustained healthcare costs, economic losses, and reduced health-related quality of life. However, most people with early stages of NAFLD do not require specialist services and are cared for by primary and secondary care services. There is a considerable variance in the treatment methods used for the initial therapy of NAFLD, and most providers report

This is an open access journal, and articles are distributed under the terms of the Creative Commons Attribution-NonCommercial-ShareAlike 4.0 License, which allows others to remix, tweak, and build upon the work non-commercially, as long as appropriate credit is given and the new creations are licensed under the identical terms.

For reprints contact: WKHLRPMedknow_reprints@wolterskluwer.com

How to cite this article: Kaushal K. Non-alcoholic fatty liver disease (NAFLD) integration into India's NCD program – Obstacles and solutions for the implementation of guidelines at the national level. J Family Med Prim Care 2024;13:3536-9.

facing obstacles when addressing it. There is a need to reassess screening and risk stratification recommendations in primary care to align better with the requirements of that setting. Ministry of Health and Family Welfare in India^[7] recognized the need for a holistic approach and integrated public health measures to prevent NAFLD into the existing national program for NCDs—the National Program for Prevention and Control of Cancer, Diabetes, Cardiovascular Diseases, and Stroke on Feb 22, 2021. The program was recently renamed the National Program for Prevention and Control of NCDs (NP NCD). The key strategies in this landmark include a continuum of prevention and care to address the spectrum of NAFLD at various levels of health care. In this bottom-up approach, the first step is in the community, where health workers will do risk assessments (based on measurement of waist circumference (WC) and history of DM to identify individuals with an increased risk of having NAFLD. Primary-care providers will validate these risk assessments, administer appropriate therapy for risk factors, or facilitate referral. Easy-to-use and inexpensive non-invasive tests, such as the Fibrosis-4 risk score^[8] for advanced liver fibrosis, have been included in the operational guidelines, offering the opportunity to reduce inappropriate referrals to specialists. At the secondary-care level, diagnosis of NAFLD and risk stratification for advanced liver fibrosis, including the use of transient elastography, will guide further management and referral.^[7]

However, even after 3 years, there is no yardstick to measure the extent of implementation of this integration. We are yet to determine the exact facilitators and barriers to implementing the program. A lack of awareness can cause poor communication about health benefits, inadequate use of healthcare informatics, insufficient management training, lack of financial resources, or limited collaboration with other healthcare organizations.

For the implementation of any health program, intersectoral coordination and collaboration among various stakeholders are of utmost importance. The author intends to share broad observations regarding the implementation of NAFLD integration and the proposed solutions in the present article. Understanding these issues in detail will serve as a starting point for this long journey to implement these guidelines in real-world settings based on the contextual settings varying from state to state to ensure effective care delivery.

Various Observations, Challenges, and Way Forward

Need to replace old monthly reporting formats with the updated forms under NP NCD at all levels of healthcare

When the operational guidelines were released in 2021, all the reporting forms as mentioned in Table 1 were updated to include NAFLD as an important indicator and were shared as annexures in the operational guidelines.

However, health centers at various levels of care are still using outdated reporting formats to compile monthly reports, which do not include NAFLD.

If all the states are not already using them, they need to start using the updated reporting formats available in the annexures of the national guidelines on NAFLD.^[7] Multiple trainings for primary, secondary, and tertiary healthcare personnel and community health workers at the state level will sensitize the workforce on what to record in reporting, when to refer, and how to increase the reporting on NAFLD and bring the problem to the surface.

Non-communicable disease (NCD) registers

NCD registers are maintained at all levels of healthcare and have sociodemographic variables such as name, age, sex, village, mobile number, symptoms, height, weight, body mass index (BMI), blood pressure, blood sugar, visual inspection with acetic acid (VIA) test for cervical cancer, breast and oral cancer details, and current treatment and referral. It does not have the WC column, an essential variable for referring NAFLD suspects. Although states have a separate register to document referrals, the NCD register also has a column to report the referral status, which is often unfilled in that register.

To increase the screening and referrals of NAFLD suspects, it would be helpful to create a separate column for WC next to the history of DM. If WC and DM are recorded side by side, it will be easier to identify patients who are at risk of NAFLD following recent guidelines. Thus, the presence of either or both conditions must be referred to as NAFLD suspect.

NCD application and community-based assessment checklist (CBAC) form

NP NCD envisaged that the paper health records maintained by the Auxiliary Nurse Midwives (ANMs) and Accredited Social Health Activists (ASHAs) be digitalized for all the population-based screening conducted for women and men aged 30 years and above in the community or in the health facility nearby for smoother and effective treatment and referral. While earlier, the application or software was called Comprehensive Primary Healthcare Non-Communicable Disease,^[9] it has now been renamed as the National NCD portal.

However, in light of recent additions to the NP NCD program, the NCD application needs to be updated to accommodate the new conditions under NP NCD. It shows the complete CBAC, personal history and examination, and the original five conditions covered under the NP NCD mandate (DM, hypertension, and three cancers). Second, WC only gets recorded in the CBAC form in the form of scoring rather than the actual WC value and thus does not reflect separately in the dashboard. Because of this reason, it is challenging to derive how many had the given cut-off for referral under the program (>80 centimeters for females and >90 centimeters for males for referral).

Table 1: Various (Forms 1, 2, 2A, 3A, 3B, 4, 5A, 5B, 6) monthly reporting and compilation formats under the NP NCD program in India

Level	Reporting form	Data generated from	Person responsible	Reporting to	Submission of the previous month's report by
Subcenter	1	ANM screening register	CHO of SHC-HWC	PHC	Last day of the month
PHC (including urban PHC-HWC)	2 & 2A	PHC-HWC OPD register & compiled all Form-1	MO I/c PHC-HWC	CHC NCD Clinic	5 th of every month
CHC/BPHC/SDH	3A	CHC NCD OPD register	MO I/c CHC NCD clinic	District NCD cell	7 th of every month
	3B	Compiled all forms 1& 2	BPHC/SDH		
District Hospital	4	DH- NCD OPD Register	MO I/c District NCD clinic	District NCD cell	7 th of every month
District NCD cell	5A	Form 5A Compiled all forms 3A & 4	District Nodal Officer (NCD)	State NCD Cell	10 th of every month
State NCD cell	5B	Form 5B Compiled all forms 3B			
	6	Form 6 Compiled all forms 5A & 5B	State Nodal Officer (NCD)	National NCD cell	15 th of every month

PHC=Primary Health Centre, CHC=Community Health Centers, MO=Medical Officers, BPHC=Block Primary Health Centre

We should plan to update the NCD application to include NAFLD. This will help us leverage technology to generate automatic reports at the end of the month, which will give us a clearer picture and monitoring framework for NAFLD-related morbidity and referrals. Along with this, we should aim to increase screening and referral by using updated reporting formats and recording WC in NCD registers.

Capacity building of the frontline workers

It is vital that we provide our frontline workers with the proper training they need to accurately measure WC. It is important to note, however, that some community members may feel hesitant about this process. It is up to us to address their concerns and ensure that everyone feels comfortable and empowered to prioritize their health.

Sensitization of the general population regarding NAFLD as a preliminary condition for DM will make sense for the general public. DM and NAFLD commonly exist together. It has been considered as a manifestation of metabolic syndrome. NAFLD has a prevalence of 70% among DM patients.^[10] It is crucial for the program to enhance the skills of frontline workers and healthcare professionals for early identification of NAFLD. The local community may be hesitant to allow frontline workers to measure their WC. It is important to educate the former about NAFLD and its link to the development of diabetes for early identification and referral of NAFLD suspects.

Discussion

There is a pressing need to address NAFLD at national and global levels. Although NAFLD is a pressing public health problem, no country^[11] was found to be well prepared to address it. India was found to have the highest score (42.7) among 102 countries. However, this fell well below the best-case reference scenario, highlighting the importance of countries prioritizing improvements in their overall score rather than their ranking. India has made significant strides in the field of NAFLD detection and care management. This is largely due to the recent release of national operational guidelines, which have helped the country score high in these domains. With the implementation of

these guidelines, India has gained a reputation for being ahead of the curve in promoting better healthcare practices and ensuring the well-being of its citizens.

The next step in the long journey toward providing comprehensive and effective healthcare services to those affected by NAFLD is the implementation of NAFLD guidelines under NP NCD. Implementation research is an essential tool in determining the direction of this next step. It will address the challenges of the knowledge gap and aim at achieving a shared health impact among researchers, policymakers, program implementers, and communities in real-world settings.^[12] This research will contribute to building more robust and responsive health systems that are tailored to specific contexts.

NAFLD is frequently encountered by primary care physicians who may come across non-specific liver function tests (LFTs) or an incidental finding of steatosis on an ultrasound scan. However, interpreting these results and explaining their significance to the patient can be difficult, and there is a significant variation in practice. Primary care physicians are usually the ones who make the diagnosis, identify those at risk, initiate investigations, and provide advice regarding modifiable lifestyle factors. Therefore, it is crucial that primary care physicians are knowledgeable about the inquiry available locally and how to act on the results. Nevertheless, there needs to be more agreement with current guidelines, reducing uncertainty in decision-making.

Primary care physicians face several challenges in screening and managing patients with NAFLD. There is uncertainty about the best approach for screening and risk stratification of NAFLD. NAFLD is often diagnosed incidentally or presumed based on imaging findings or elevated liver enzymes. However, liver enzymes have limitations in sensitivity for detecting NAFLD and NASH. Identifying patients at high risk for advanced fibrosis or cirrhosis is crucial as most NAFLD patients are asymptomatic until complications arise. Non-invasive biomarkers and imaging techniques such as transient elastography can aid in risk stratification, but their utilization in real-world clinical practice may be limited.

While primary care physicians have a good understanding of NAFLD prevalence and risk factors, there may be a need for further education and training on the most recent guidelines for NAFLD management. Addressing these challenges through improved guidelines, education, and access to diagnostic tools can enhance the screening, diagnosis, and management of NAFLD in primary care settings.

Financial support and sponsorship

Nil.

Conflicts of interest

There are no conflicts of interest.

References

1. Younossi Z, Anstee QM, Marietti M, Hardy T, Henry L, Eslam M, *et al.* Global burden of NAFLD and NASH: Trends, predictions, risk factors and prevention. *Nat Rev Gastroenterol Hepatol* 2018;15:11-20.
2. Shapiro WL, Noon SL, Schwimmer JB. Recent advances in the epidemiology of nonalcoholic fatty liver disease in children. *Pediatr Obes* 2021;16:e12849.
3. Radulescu A, Dugan AJ, Killian M, Attia SL, Mouzaki M, Fuchs GJ, *et al.* Stratification by obesity class, rather than age, can identify a higher percent of children at risk for non-alcoholic fatty liver disease and metabolic dysfunction. *Pediatr Obes* 2022;17:e12862.
4. Mantovani A, Csermely A, Petracca G, Beatrice G, Corey KE, Simon TG, *et al.* Non-alcoholic fatty liver disease and risk of fatal and non-fatal cardiovascular events: An updated systematic review and meta-analysis. *Lancet Gastroenterol Hepatol* 2021;6:903-13.
5. Byrne CD, Targher G. NAFLD: A multisystem disease. *J Hepatol* 2015;62:S47-64.
6. Targher G, Tilg H, Byrne CD. Non-alcoholic fatty liver disease: A multisystem disease requiring a multidisciplinary and holistic approach. *Lancet Gastroenterol Hepatol* 2021;6:578-88.
7. Operational guidelines of non alcoholic fatty liver disease (NAFLD) into NPCDCS. Ministry of Health and Family Welfare. GOI. Available from: <https://main.mohfw.gov.in/newshighlights-42>. [Last accessed on 2024 May 11].
8. Blanco-Grau A, Gabriel-Medina P, Rodriguez-Algarra F, Villena Y, Lopaz-Martinez R, Augustin S, *et al.* Assessing liver fibrosis using the FIB4 index in the community setting. *Diagnostics (Basel)* 2021;11:2236.
9. CPHC NCD Solution-NCD Application ANM User Manual_0. pdf. Available from: https://main.mohfw.gov.in/sites/default/files/CPHC%20NCD%20Solution%20-%20NCD%20Application%20ANM%20User%20Manual_0.pdf. [Last accessed on 2024 May 11].
10. Dharmalingam M, Yamasandhi PG. Nonalcoholic fatty liver disease and Type 2 diabetes mellitus. *Indian J Endocrinol Metab* 2018;22:421-8.
11. Lazarus JV, Mark HE, Villota-Rivas M, Palayew A, Carrieri P, Colombo M, *et al.* The global NAFLD policy review and preparedness index: Are countries ready to address this silent public health challenge? *J Hepatol* 2022;76:771-80.
12. Theobald S, Brandes N, Gyapong M, El-Saharty S, Proctor E, Diaz T, *et al.* Implementation research: New imperatives and opportunities in global health. *The Lancet* 2018;392:2214-28.