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# Lifestyle Behavior Change in Patients With Nonalcoholic Fatty Liver Disease: A Qualitative Study of Clinical Practice

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Nonalcoholic fatty liver disease (NAFLD) is the most common liver condition worldwide and is linked largely to obesity and inactivity. Lifestyle modification is the primary treatment for NAFLD targeting dietary change, physical activity, and exercise to facilitate weight loss and weight loss maintenance.<sup>1-3</sup> This has been shown to reduce steatosis and ameliorate steatohepatitis. European Clinical Practice Guidelines for the management of NAFLD<sup>3</sup> highlight the importance of targeting lifestyle behavior change in all patients with NAFLD regardless of disease severity. These guidelines recommend combining dietary restriction and a progressive increase in aerobic exercise and resistance training with a focus on tailoring interventions to the individual patient. Practice guidelines published by the American Association for the Study of Liver Diseases<sup>4</sup> recommend weight loss of at least 3% to 5% of body weight via hypocaloric diet or diet combined with increased physical activity but state that these lifestyle interventions should target patients with nonalcoholic steatohepatitis. Given the benefits of lifestyle behavior change, this study explored the perceptions surrounding clinical care as currently offered to patients with NAFLD. The aim of this study was to establish whether current provision of lifestyle behavior change support is sufficient, whether health care professionals believe they have the tools to target lifestyle behavior changes effectively, and how targeting diet and physical activity/exercise to facilitate weight loss and weight loss maintenance in practice can be improved from the perspective of health care professionals and patients.

## Methods

Semistructured qualitative interviews were conducted with 21 health care professionals from 2 UK National Health Service Hospital Trusts and 11 UK National Health Service Clinical Commissioning Groups across a range of specialties (hepatology, gastroenterology diabetology, and primary care) and 12 patients diagnosed with NAFLD. Interviews were conducted using 2 interview topic guides developed with reference to the American Association for

the Study of Liver Diseases and the European Association for the Study of the Liver, European Association for the Study of Diabetes, European Association for the Study of Obesity NAFLD guidelines.<sup>4,5</sup> They explored perceptions and experiences of current clinical practice including the diagnostic process, management of NAFLD, and recommendations for intervention and optimization of the current care pathway. All interviews were audio recorded, transcribed verbatim, and analyzed independently by 2 researchers using directed content analysis. Study design and reporting were in accordance with the “consolidated criteria for reporting qualitative research”<sup>6</sup> checklist.<sup>6</sup>

## Results

Physicians reported that the process for diagnosing and assessing NAFLD improved after implementation of local guidelines (Table 1, subtheme 1.1); however, they reported that the drivers of referral from primary to secondary care varied considerably. For example, a number of primary care physicians referred patients with abnormal liver test results or abnormal liver imaging suspecting NAFLD. They regularly provided a NAFLD score but requested advice for ongoing management and treatment, specifically about whether further investigations were required (Table 1, subtheme 1.1). Once diagnosed, a lack of knowledge and tools to deliver effective lifestyle behavior change meant that health care professionals reported monitoring rather than actively managing NAFLD (eg, annual reviews consisted of assessing disease progression) (Table 1, subthemes 2.1, 2.2, 3.1, and 3.2). Patients reported a lack of information provision after diagnosis of NAFLD, specifically relating to NAFLD severity. Furthermore, some patients were

Abbreviation used in this paper: NAFLD, nonalcoholic fatty liver disease.

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**Table 1.** Illustrative Quotations by Theme From Data Generated by Health Care Professionals and Patients With NAFLD From Primary and Secondary Care

	Illustrative quotations	
117		175
118		176
119		177
120		178
121		179
122	1.0 Theme: diagnosis	180
123	1.1 Subtheme: local guidelines	181
124	have improved the	182
125	diagnostic process	183
126	1.2 Subtheme: inadequate	184
127	information provision	185
128	about what the diagnosis	186
129	means	187
130		188
131		189
132		190
133		191
134		192
135		193
136	2.0 Theme: management	194
137	2.1 Subtheme: monitoring	195
138	vs active management	196
139	2.2 Subtheme: general	197
140	lifestyle advice rather	198
141	than tailored intervention	199
142	2.3 Subtheme: monitoring	200
143	vs management	201
144	2.4 Subtheme: information	202
145	provision about NAFLD is	203
146	lacking	204
147		205
148		206
149		207
150		208
151		209
152	3.0 Theme: recommendations	210
153	3.1 Subtheme: training to	211
154	improve knowledge of	212
155	NAFLD, diagnosis, and	213
156	the referral pathway	214
157	3.2 Subtheme: training to	215
158	improve delivery of	216
159	lifestyle interventions	217
160	3.1 Subtheme:	218
161	information needs	219
162	3.2 Subtheme: tailored	220
163	support from a	221
164	multidisciplinary team	222
165		223
166		224
167		225
168		226
169		227
170		228
171		229
172		230
173		231
174		232

Table 1. Continued

	Illustrative quotations	
233		291
234		292
235		293
236		294
237		295
238		296
239		297
240		298
241		299
242	4.0 Theme: service delivery	300
243	4.1 Subtheme:	301
244	multidisciplinary	302
245	team input is important to	303
246	tailor management of NAFLD	304
247	4.2 Subtheme: tools to support	305
248	management of NAFLD	306
249	4.3 Subtheme: approach to	307
250	management that is flexible	308
251	and offers choice	309
252		310
253		311
254		312
255		313
256		314
257		315
258		316
259		317
260		318
261		319
262		320
263		321
264		322
265		323
266		324
267		325
268		326
269		327
270		328
271		329
272		330
273	HCP-PC, health care professional from primary care; HCP-SC, health care professional from secondary care.	331
274		332
275		333
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289		347
290		348

advised that NAFLD is nothing to be concerned about when compared with other health conditions (ie, health conditions such as diabetes were viewed as more important) (Table 1, subtheme 1.1). This was particularly the case in primary care. Patients reported a lack of support thereafter to manage their condition effectively. They reported being advised to lose weight but did not receive any support to do so (Table 1, subtheme 2.1) and reported not knowing that NAFLD could be improved via lifestyle modification (Table 1, subtheme 3.1). This could explain in part why the majority of patients rarely succeed with weight loss in this context. Both participant groups reported the need for a multidisciplinary team to support the management of NAFLD, including a range of lifestyle intervention options that are sensitive to the needs and preferences of patients and that help to

support long-term behavior change (Table 1, subthemes 3.2 and 4.1–4.3).

## Discussion

Although evidence has shown that lifestyle interventions targeting diet and physical activity/exercise for weight loss are effective for managing NAFLD, and published clinical guidelines recommend such intervention, we have identified a substantial disconnect between guidance and how clinical care is delivered in practice. A lack of resources and training on how to target lifestyle behavior change to help manage NAFLD long term effectively was reported by health care professionals, as well as the need for a joint way of working across

disciplines to avoid miscommunication to patients. Patients further reinforced this finding, indicating that information and support at the time of diagnosis and thereafter is severely lacking.

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## Reprint requests

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## Conflicts of interest

The authors disclose no conflicts.

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Q1Q2

Q3

Q4