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Risk, the prediabetes diagnosis and preventive strategies: critical insights from a qualitative study

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Diagnosis constitutes a major categorisation tool in medicine. This paper adds to the paucity of knowledge about part of the work such a tool performs. It examines the ways in which diabetes epidemiology translates into attempts to prevent diabetes from occurring through screening and diagnosing, and then managing those categorised as ‘at high risk’. Using a qualitative design in the context of a small-scale Danish intervention study, the findings suggest that health professionals overinterpreted relative risk reductions and exaggerated treatment effects; simultaneously, prediabetics called into question the scientifically set thresholds. Nonetheless, arguments concerning changed behaviour’s benefits were sought to be incorporated into self-care routines. The data highlight how, by identifying a normatively set threshold, a diagnosis can determine health promotion messages’ impact in ‘high-risk’ prevention strategies.

Keywords: prediabetes; risk; screening; health promotion

Introduction

Using the framework of the sociology of diagnosis (Brown, 1995; Jutel, 2009, 2011), this paper discusses the implications of prediabetes being advanced as a disease rather than as an arbitrary risk condition. From a sociological perspective, a medical diagnosis is both a category and a process (Blaxter, 1978). Once formalised by its inclusion in a classificatory scheme, the diagnostic category cements a view of health realities privileging certain voices and silencing others (Jutel & Nettleton, 2011). The sociology of diagnosis has been used to analyse alcoholism (Blaxter, 1978), Lyme disease (Aronowitz, 1991), female hypoactive sexual desire disorder (Jutel, 2011), genetic risk (Novas & Rose, 2000) and high cholesterol (Jovanovic, 2014). It allows for considering ‘how and why particular diseases [such as prediabetes] are framed as they are and not in another way’ (Jutel, 2011, p. 143). High levels of cholesterol and blood glucose are both examples of (ab)normalities that have been labelled as diseases before they manifest symptomatically, with both promoted as conditions needing immediate medical attention. For elevated cholesterol, attention often means adhering to a treatment prescribing cholesterol-lowering medication, commonly known as a statin. For prediabetes, attention means addressing ‘poor lifestyle choices’ (Korp, 2010). An affinity is observed between recommendations given to prediabetics and a contemporary, ubiquitous moral imperative that everybody should live healthily and eat food high in fibre and low in

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polyunsaturated fat, use alcohol in moderation, quit smoking and be physically active. People who fail to take proper care of themselves – vis-à-vis this public moral imperative – appear unmotivated, ignorant, in denial, unaware or careless. In this study, we use the sociology of diagnosis framework to take the prediabetes diagnosis as a point of departure and follow its translation from medicine to a diabetes prevention practice involving both health care professionals (HCPs) and patients.

From a public health standpoint, there is keen interest in reducing the progression from the ‘predisease’ level to that of a ‘disease’. The rationale espoused is that if people take proper care of themselves, the State will save money on expensive medical treatments, as the population ages. Numerical values obtained via blood testing play an important role in this effort. We find people categorised as prediabetics become diabetic at a rate of about 5–10% per year (Tabàk, Herder, Rathmann, Brunner, & Kivimäki, 2012). Moreover, on a global level, the number of people with type 2 diabetes increased from 153 million in 1980 to 347 million in 2008 (Danaei et al., 2011). This change has led to such notions as the ‘diabetes epidemic’ that emphasises the rate of increase (Garber et al., 2008). The World Health Organization (WHO) projects type 2 diabetes will become one of the world’s main disablers and killers within the next 25 years (WHO, 2013), illustrating the disease’s perceived social significance. Since type 2 diabetes is considered a chronic disease that will consume an ever-increasing share of national health care budgets, diabetes-related aetiology has emerged as a major public health care issue, along with the need for effective means to prevent it.

Establishing the potential for and feasibility of prevention relies on identifying modifiable risk factors (Green & Tones, 2010). According to contemporary epidemiology, type 2 diabetes results from a number of risk factors, the most prominent of which are overweight and obesity. However, genetics, poverty, policy and political barriers are at least as important as the more naturalised risk factors (Chaufan, Constantino, & Davis, 2011; McNaughton, 2013). Numerous studies have demonstrated lifestyle interventions can prevent or delay the progression of prediabetes to diabetes (for an overview, see Norris, Zhang, Avenell, Gregg, & Bowman, 2005). Modifying patients’ diets and increasing their amount of physical activity supposedly halve the number of individuals with elevated blood glucose (Gillies et al., 2007). Nonetheless, some patients remain prediabetic, meaning they are unsuccessful in lowering their blood glucose levels, despite undergoing intensive lifestyle interventions (Perreault et al., 2012).

According to Adelswärd and Sachs (1996), risk’s ambiguities stem from the condition’s translation from medicine and epidemiological findings into clinical knowledge and practice, and then to lay experience. Whereas lay views concerning diabetes causation and the efficacy of self-management practices among people who already have type 2 diabetes have been analysed with great insight (Lawton, Peel, Parry, Araoz, & Douglas, 2005), only a few studies (Eborall et al., 2012; Jallinoja, Pajari, & Absetz, 2008; Troughton et al., 2008; Wijdenes-Pijl, Dondorp, Timmermans, Cornel, & Henneman, 2011) consider the barriers to a screening uptake and a diagnostic test for prediabetes, with hardly any addressing patients’ or general practitioners’ (GP) perspectives and views on participating in a prediabetes screening-and-intervention process.

Therefore, this study aims to critically test the hypothesis of Adelswärd and Sachs, and takes the prediabetes category as a point of departure and follow its translation from (i) medicine to (ii) diabetes preventive intervention involving HCPs to (iii) people diagnosed as being ‘at high risk’. How is the medical categorisation of prediabetes formed, and what rationality does it represent? How are the subsequent health education
messages translated by health professionals, and finally, how are these strategies perceived by the target group?

Our attempts to answer these questions are structured as follows: the first part of the paper analyses the medical categorisation, along with the diagnostic tension in relation to prediabetes. We show how the prediabetes diagnosis has been and remains an arena of contest and compromise by demonstrating how epidemiology and medicine continually modify the boundaries of what are considered normal or problematic threshold values. The paper then describes the study design before presenting our empirical findings that demonstrate the ways in which expert and lay understandings concerning diabetes causation, candidacy and handling converge and diverge. Finally, health policy implications of our findings are discussed.

**Prediabetes in epidemiology and medicine**

Medicine defines diabetes as a high concentration of glucose in the circulating blood. Glucose levels cover a continuous spectrum from those considered normal to those considered diagnostic of diabetes (Garber et al., 2008). Furthermore, many prediabetics suffer from comorbidities, such as high levels of both blood pressure and cholesterol. The potential to avert complications through early diagnosis and intervention forms the rationale for prediabetes screening.

Whereas the Western medical tradition has long recognised diabetes as a disease (Rock, 2003), its diagnostic criteria engenders much debate among specialists. Several decades ago, the National Diabetes Data Group (NDDG) in the United States developed consensus diagnostic criteria for diabetes, based on population distributions of glucose concentrations that included a fasting plasma glucose (FPG) concentration of 7.8 mmol/l or higher and/or an oral glucose tolerance test of 11.1 mmol/l or higher (1979). These criteria became the worldwide standard for diagnosing diabetes. Even then, however, the NDDG (1979, p. 1050) noted: ‘There is no consensus as to the dividing line between normal and diabetic glucose levels’, acknowledging that the cut-off points chosen were arbitrary.

In late 1990s, the Expert Committee on Diagnosis and Classification (1997) recommended lowering the FPG cut-off point from 7.8 to 7.0 mmol/l. The arguments in favour of change were that the earlier value diagnosed too few people at risk. In 2010, the American Diabetes Association added haemoglobin A1c (HbA1c) as a diagnostic test for diabetes (≥6.5%) and prediabetes (5.7–6.4%) as an alternative to fasting glucose, as is a measure from the past three months, compared with FPG, which is only momentary (Cohen, Haggerty, & Herman, 2010). The change created debate among researchers and clinicians (Borch-Johnsen & Colagiuri, 2009) and means that at present, different diagnostic tests are used in different countries. Redefining diagnostic criteria redefines the disease’s perceived severity and implies that ‘a transatlantic trip may cure or cause diabetes simply as a result of small but important differences in diagnostic criteria’ (Borch-Johnsen & Colagiuri, 2009, p. 2247).

In sum, test results and numeric values are considered essential in diagnosing prediabetes and in categorising individuals’ health status. For the categorised individual, however, major negotiations are involved in interpreting and understanding test results. This situation can challenge HCPs involved in providing risk information and lifestyle advice to those targeted in the preventive intervention. It also has an impact on evaluating knowledge claims among the intended target group. The remainder of the paper sheds light on these practices.
Method

Sampling and data collection

Prior to this qualitative study, interviewees participated in a diabetes prevention study in general practice in Denmark with the objective to reduce their HbA1c (Maindal, Bonde, & Aagaard-Hansen, 2014). Although in Denmark, diabetes is mainly diagnosed and treated by GPs (Pedersen, Andersen, & Sondergaard, 2012), screening and preventive intervention targeting prediabetics is not part of a GP’s daily routine. The prevention study was conducted in eight general practices in two different regions of Denmark. A total of 64 screen-detected patients were recruited by GPs, based on the following inclusion criteria: 40 to 65 years of age, body mass index (BMI) above 25 kg/m², and an HbA1c value between 6.0 and 6.4%. Lifestyle intervention was offered, focusing on information and advice about dietary changes, increased physical activity and weight loss, along with four 10 to 30-min consultations offered with a GP and/or practice nurse over a period of three to four months. The health professionals were instructed to not teach in a traditional way but rather to allow participants to formulate their own goals for losing weight, thereby enabling them to work on their own health challenges.

To explore areas of commonality and divergence between HCPs and prediabetics regarding the impact of labelling, causality and participating in the lifestyle intervention, a series of in-depth and group interviews were conducted. Thirteen HCPs – seven GPs and six practice nurses – who comprised the main study’s health professionals were recruited. These interviews were conducted as group interviews at one of two locations and lasted approximately two hours. One group consisted of three GPs and four nurses and the other, of four GPs and two nurses. Group interviews were chosen, as this technique makes visible social phenomena, such as points of view, which may often remain hidden in individual interviews (Kitzinger, 1994). The interviews also provided an opportunity to focus on the social negotiation of prediabetes and its prevention among HCPs.

In addition, 10 interviews were conducted with people from various parts of Denmark who had been diagnosed as prediabetic (five women and five men); four semi-skilled workers, four mid-level public-sector employees and two school teachers. Recruitment for the study proved problematic, reducing our initially intended 20 participants to 10. These interviews were conducted 12 months post-diagnosis. Due to the patients’ other diagnoses (particularly high cholesterol and high blood pressure), all were still seeing the GPs or nurses every three to four months, and all experienced fluctuating test results over time.

These interviews lasted approximately 90 min, and a semistructured topic guide was used. Nine of the interviews were conducted in the patient’s own home, and one was conducted over the telephone. Patients were invited to give an account (narrative) of their prediabetes from their diagnosis to the present, focusing on how the diagnosis had affected their daily lives; their emotional reactions on receiving the diagnosis and their concomitant views about the lifestyle intervention conducted; how they perceived prediabetes and diabetes, and their consequences; and their understanding of diabetes’ aetiology. The participants were also asked if they knew any other people with diabetes and whether there were any commonalities between them. All of the interviews were transcribed verbatim.

Data analysis

The analysis draws on a strand of theory showing medicine to be constructed as an institution whose knowledge claims are evaluated not only cognitively but also in terms
of its agendas and trustworthiness – namely, people contextualise expert knowledge (Davison, Smith, & Frankel, 1991; Irwin & Michael, 2003; Lawton et al., 2005; Wynne, 1992, 1996). The focus is on the translation rather than on the diffusion or implementation. For the researcher, this means studying through practice (Latour, 1987), that is, moving between individuals positioned differently in relation to diabetes prevention, and exploring the commonalities and divergences among them. Thus, rather than emphasise the relationship between scientific knowledge and the public as a hierarchy, this paper aims to emphasise symmetry. In other words, scientific knowledge and the knowledge, values and experiences of the general public are, in principle, relevant to creating health policy.

A narrative analysis (Riessman, 1993) was conducted, which focused on identifying the outcome of events narrated; on turning points, crises and problems; and on resolving the problems in relation to health professionals’ and patients’ understandings of the causes, effects and interventions that would address prediabetes. The initial template was descriptive and included codes, such as ‘fear’, ‘tool’, ‘responsibility’, ‘cause’, ‘pills’, ‘thresholds’ and ‘numbers’. The coded segments were studied and summarised to arrive at an analysis of general themes.

Research ethics
The project was approved by the Danish Data Protection Agency, since it comprises person-referable data. In all cases, informed consent was gained prior to the interviews, anonymity was guaranteed and participants were informed they could withdraw from the study at any time. In presenting the data, the individuals’ names and other identifying details were omitted to ensure confidentiality. No formal ethical clearance was required.

Results
Diagnosis as a labelling tool: the vantage point of the professional
In both sets of group interviews, the GPs and the practice nurses agreed the key messages in their interactions with patients concerned (i) the condition’s severity, (ii) preventing its progression to full-blown diabetes and (iii) the need for some kind of lifestyle change. The GPs all emphasised the importance of labelling a patient’s condition as prediabetes, arguing that doing so influenced patient motivation. Neither the GPs nor the practice nurses had used the term prediabetes in communicating with their patients prior to the project. Until this point, they had used such terms as grey area and risk of diabetes. Being part of the diabetes prevention study had made them more aware of the ‘predisease condition’. Prediabetes thus becomes an exemplary of surveillance medicine that ‘requires the dissolution of the distinct clinical categories of healthy and ill, as it attempts to bring everyone within its network of visibility’ (Armstrong, 1995, p. 395).

In their daily work, both GPs and practice nurses had found it challenging to persuade their patients to accept they were at risk of developing diabetes. With the study, it seemed that coupling the prediabetes label with a message to change diet and lose weight was more effective than general advice to do so: ‘The patients seem relieved to get the diagnosis. That now is the time to do something about it. The diagnosis legitimises this’ (GP6). Another GP agreed she found the term prediabetes useful in
getting her message across: ‘The prediabetes diagnosis motivates the patient to make an effort – it’s like a weapon’ (GP1). These statements illustrate the assumption that scientific objectivity enhances the authority of the prediabetes diagnosis, and this knowledge provides the basis for ‘healthy choices’.

A striking consensus was observed concerning the diagnosis’s fear-arousing potential capable of initiating patient behavioural change: ‘It might create fear at first. But there is a solution, so the fear turns into something positive’ (N4). In their discussions, it was quite clear that lifestyle modification was equated more with avoiding disease rather than lowering risk. In epidemiology, the definition of relative risk is the risk of developing the disease relative to exposure. Relative risk, however, tells an individual little about his or her actual risk (Green & Tones, 2010). Nonetheless, from the narratives of several of the GPs, it became obvious that relative risk had translated to absolute risk, which was then presented to the patient. We will now turn to reactions of the individuals who were categorised as prediabetics.

The gift of knowing: the lay response to the labelling

Mirroring findings from previous work (Jovanovic, 2014), it seems reasonable to note that readiness to accept responsibility for one’s health depends on one’s views about the aetiology of illness. Patients seemed to consider they were fortunate to be informed of their condition before the onset of full-blown diabetes and embraced the ‘gift of knowing’ (Kenen, 1996). All interviewees attempted a lifestyle change in accordance with the individualist doctrine of risk reduction, as illustrated in the following example:

I knew I belonged to the group at risk, because we have it in our family, and I was overweight, so that’s two reasons. I’m glad that I was diagnosed, because now I can watch out. I know that there are many complications if you don’t take care of yourself. (P4)

The statement illustrates how genetic causality and an orientation to lifestyle changes are not necessarily contradictory concepts. Another finding was how the epidemiological conception of risk as a graduated scale had been translated into a more polarised understanding whereby risk was either high or low, present or not. Changing one’s diet and becoming more physically active were described as important choices one could make. However, these practices were closely followed by such factors as the importance of relatives or friends in providing moral support to the person diagnosed with prediabetes. The patients made sense of their prediabetes by situating it within their life story and considered their practices as embedded in shared contexts:

The doctor told me that I have lived too well … my wife prepares food for me that is too good and that is the reason … he told me that if I continue eating like I do now and do some exercise, then he thinks that it can be kept down, so that I don’t need to take medication … The hard part is losing weight … Why are some people bigger than others? As soon as I touch some of the food that they say is forbidden, then I just can’t shift it … it has to do with your family being big. (P7)

P7 demonstrated that he took responsibility for his own health. However, he was also aware there are circumstances, such as genetics, that he could not influence and therefore could not control. This understanding is derived by linking knowledge about the condition with the impact of the social context in which he lived. Rather than
completely change his lifestyle, P7 opted to incorporate only those healthy behaviours that fit into an already established lifestyle.

In sum, both HCPs and patients seemed to welcome using the prediabetes diagnosis. Thus, the object statistically constructed, prediabetes, which is not real in the ontological sense, succeeds in establishing itself for both HCPs and patients as a normalising exigency. The norms give way to generalisation, which standardises the work the prediabetic should perform on him or herself. Thus, prediabetes links a macro level of biopolitics (Foucault, 2008; Rose, 2007) with a micro level of individual practices of the self, and self-government. In the following section, we will present examples of how the threat of pharmaceuticals was used as both a weapon for the HCPs and a motivator for the patient.

Avoiding pharmaceuticals: converging perspectives

Saukko, Farrimond, Evans, and Qureshi (2012) argue that the close relationship between pharmaceuticalisation and diagnosis emphasises the contradiction between a public health agenda endorsing the benefits of behavioural change and precise biochemical targets, which can often be achieved only with drugs. This is the case with high cholesterol. When a person has type 2 diabetes, it can be treated with pills or injection. For prediabetes, however, pharmaceuticals are (not yet) as readily recommended, since intensive lifestyle changes have been shown to be more effective than blood glucose-lowering medication (The Diabetes Prevention Program Research Group, 2005). For the HCPs, this seemed to be a tenet they embraced. They believed in prediabetes as a disease and that responsibility for prediabetes was best located in the prediabetics’ poor lifestyle choices. Thus, discomfort associated with being prediabetic was encouraged in order to create an imperative for action. As GP3 contended:

You can tell the patient that it might be necessary to add on some medication. This enhances the patient’s motivation … compared with diabetes patients who come to us to get medication, you can say to the person with prediabetes, ‘you can do something about this’.

Another GP tied embarrassment and shame to the regulation of patient behaviour:

The diagnosis has made it easier to work with the patients. Prediabetes is a condition that motivates the patient to do something. They all want to avoid medication and the stigma that follows from having a lifestyle disease. (GP5)

Indeed, all of the interviewees confirmed that avoiding pharmaceuticals was a driving factor in lifestyle change, as the following case illustrates:

I do the opposite of my parents – they eat pills and continue the same lifestyle … My father is in a pretty bad shape. He has COPD [chronic obstructive pulmonary disease] but continues to smoke, and they continue to eat enormously fatty food, and they don’t care at all. I want to go in another direction. (P2)

Like P2, P3 also wanted to avoid having to take pharmaceuticals. However, like six of the other patients, while arguing for lifestyle changes as a means of avoiding pills, she took statins for her elevated cholesterol:
I want to avoid having to take medication. I have a friend who also has diabetes, but she’s skinny and I always tell her that, as I am fat, I have the advantage of losing weight and avoiding pharmaceuticals. She cannot do that, because she is skinny. Another friend of mine also doesn’t have to take pills, because he does exactly like I do.

Pharmaceuticals seemed to be considered a last resort; thus, P3 argued for their minimal use and, instead, for other management strategies. In the following section, we will show a gap exists between the promise of restoring control and patients’ social experiences of being able to control health dangers.

**Health promotion promises: diverging perspectives**

The patients’ narratives include how they assess their risk. Although they changed their lifestyles, they acknowledged that doing so by no means guaranteed lowering their risk. They actively interpreted and negotiated the knowledge claims to make sense of how to behave in everyday life. The ease with which the ‘inexplicable’ could be tolerated differed among them. Some were disappointed their lifestyle changes had not made a greater impact on their blood glucose levels, while others believed they had made few changes yet still obtained good results.

If we turn to medicine, we learn that glucose levels are influenced by factors other than diet, such as gender, family history and age, which individuals are powerless to modify. Thus, behavioural change may or may not reduce the assessed blood glucose level. In a preventive intervention, such as this one, linking risk to lifestyle has the potential to make people consider themselves the greatest threat to their own health. Comorbidity, defined as when a person has more than one chronic disease, occurs frequently among diabetics. None of the HCPs mentioned this aspect of diabetes epidemiology in the group interviews. Rather, a nurse (N) reflected on poor results as a lack of accepting responsibility for one’s own health: ‘It has to do with denial – they don’t want to change their understanding of quality of life. They think that the GP fixes the problem, but in this case they have to do it themselves’ (N2). This quotation highlights the understanding that the individual is both the cause and the solution to prediabetes. Thus, in the end, high-risk screening and following individualised lifestyle intervention incurs blame, as those who cannot present a decline in HbA1c levels are accused of taking improper care of themselves.

On the other hand, the complexity of diabetes aetiology was brought up by several patients. As stated by P6:

I think that it might be something that follows the high blood pressure and the cholesterol. That [it] is something I inherited, and I can do nothing about that, really … I don’t know where diabetes comes from. I consider it as an associated condition. Maybe I was a bit overweight, but it is not something that makes me panic. Maybe it ought to, but it doesn’t. I have managed to eat and do physical exercise in a way that makes the cholesterol number look nice, so I can also control the other stuff. [the prediabetes]

P6 is demonstrating an awareness and understanding of the broader social and material factors associated with being at risk of developing diabetes, while simultaneously adhering to the medical model of aetiology. As she did, several of the other patients shifted between believing and questioning the health promotion messages. The clear gap between health promotion assurances concerning lifestyle changes helping gain control over disease risk and lay experiences of treatment effects promoted reflection and thus
constituted a space of possibility in which the prediabetes made their own connections and interpretations of this knowledge. They were not simply trapped in this gap; rather, they negotiated truth claims about their lifestyles by connecting their risk profile and the gift of knowing with other ways of acting responsibly. P10 had been trying for years to lower his cholesterol by changing parts of his diet, but to no avail. Thus, in his experience, effort and results were incongruent, which created scepticism about the worth of increasing his level of physical activity. Consequently, P10 sought guaranteed improvements:

I will start to exercise if they can prove that it helps. It’s just like oat flakes. It’s supposed to help my cholesterol, but it doesn’t … I eat 300 g of fish every week, and I have done that for two to three years by now, but darn if it helps on the cholesterol number. My GP told me that I should take statin pills, but I read about the side effects and no way is she going to talk me into taking those pills.

Causal certainty is clearly of great importance to P10 and had invalidated the prevention messages. Several of the others demonstrated in their narratives that they, too, were searching for explanations or a sense of direction to deal with their high blood glucose, for although they thought they had put forth a good effort at change, they had achieved poor results. Worth noting is that like P10, many of this study’s patients also had high readings of both cholesterol and blood pressure. They saw their blood glucose, cholesterol and blood pressure levels as being either above or below recommended threshold levels. Their understandings reflect the constantly shifting recommendations in ‘treatment’ threshold levels, which had reduced confidence in the information provided by their GP. Thus, as argued by Crinson, Shaw, Durrant, De Lusignan, and Williams (2007), what can be observed as a purely technical change in the clinical management of these at-risk diseases is much more problematic to the patients themselves.

Discussion

The sociology of diagnosis is a framework purporting to help us understand patient compliance in a diabetes preventive intervention. This paper adds to the literature concerning how the scope of medical surveillance and management is expanded in an ever-increasing range of health-related phenomena by employing the concept of risk (Conrad, 2007). As suggested by Linell, Adelswärd, Sachs, Bredmar, and Lindstedt (2002), the degree to which risk is discussed explicitly in medical contexts depends on a number of variables, such as the perceived cause (genetics or lifestyle), and how imminently the adverse event is likely to affect the patient’s life. In the case of prediabetes, the significance of high HbA1c levels promotes an obligation to act immediately to prevent development of full-blown diabetes (Novas & Rose, 2000). Thus, it constitutes a strategy for disciplinary power to monitor and govern individuals with the aim of achieving behavioural modification (Rose, 1999). The prediabetes categorisation of people becomes formative in relation to their sense of self and daily conduct, even as it is being contested and resisted. As noted by Jutel (2011, p. 2), the contingency of diagnosis: ‘… is generally not as obvious as its transformative power’. The emphasis on individuals being responsible for their own health creates dilemmas, as risks of diabetes thereby are desocialised, privatised and individualised. Moreover, this categorisation is not an a priori ontological entity but rather contingent and reliant on political and social priorities, as well as knowledge and values.
We set out to critically consider whether the ambiguities of diabetes risk stem from the condition’s translation from epidemiology into clinical knowledge and practice, and then to lay experience. Elevated blood glucose is the biomedical marker of and theoretical link to the disease that one is trying to prevent. This study has shown that, whereas epidemiology speaks of the risk of diabetes as a measured property of a group of people, some HCPs speak of the risk of diabetes as a specific property of the prediabetic. By elevating prediabetes to a disease category, new expectations and obligations are created concerning who bears responsibility for health maintenance. The aim is to ensure prediabetics see their lifestyle as problematic from a medical point of view. This type of intervention is designed and promoted as a practice that can restore control. However, presenting numerical values is not a neutral or simple transfer of information; there is always an interpretation and value-based estimation attached to the risk communication (Skolbekken, 1998). For example, some people, despite having a BMI within normal limits, remain at high risk of developing diabetes (Florez, 2012).

A diagnosis of prediabetes shares many similarities with the screening of high cholesterol, which has been linked to an increased risk of coronary heart disease and stroke, and has led it to be characterised as a risk factor now classified as a disease (Jovanovic, 2014); its level is also measured numerically via screening. Crinson et al. (2007) explored the risk management of patients deemed to be at ‘high cardiac risk’. They found that adherence to a prescribed intervention involved the patient assessing the expected benefits gained by reducing his or her personal chances of a future event. They also found that the successive lowering of recommended threshold levels appeared to have been an exasperating experience for people with high cholesterol.

Such types of intervention constitute an increasing portion of Western governments’ health policies and are based on the belief it is possible to reduce risk factors and improve health by changing lifestyles. While risk behaviours are manifested in individuals, they are generated and reinforced within a social context and are strongly related to social determinants, with, for instance, the poor within wealthy regions being disproportionately affected. In this study, only participants from the lower or middle classes participated. It is noteworthy that nine of them were able to achieve a reduction in weight or HbA1c levels or both, indicating that these individuals wanted to appear in a favourable light, thus echoing the dictum in health promotion about taking responsibility for one’s own health. In general, lifestyle interventions appeal to those with greater resources who are better able to apply the appropriate information to improve health and extend life (Diderichsen, Andersen, & Manuel, 2012). Given the rise in the incidence of diabetes, trying to change what Link and Phelan (1995) call fundamental causes of disease, rather than targeting those individuals most afflicted, seems a more fruitful approach.

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