

Fuel Poverty and Disability: a statistical analysis of the English Housing Survey

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Introduction

The Department of Social Policy and Social Work and the Centre for Housing Policy at the University of York have been awarded a grant by eaga Charitable Trust to investigate the relationship between fuel poverty and disability. This first project deliverable considers the relationship between different indicators of disability and long term illness (self reported, state defined, and types of reported disability and illness), different measures of fuel poverty (the 'official' full income version, and the often used basic income version), and a range of other factors typically associated with the prevalence of fuel poverty.

The results presented are taken from the 2010 to 2011 year of the English Housing Survey (EHS). Household level data have been used to consider two key variables based on the presence of at least one household member with a disability or illness and the two definitions of fuel poverty described above. These results are then analysed against a number of other factors often associated with fuel poverty; household composition, tenure type, and measures of low income (see for example Fahmy *et al* 2011, DECC 2012, Walker and Day 2012, Baker *et al* 2003). Region has also been considered as fuel poverty rates have been found to vary significantly across England (DECC 2012), as do numbers of disability related benefit claims such as incapacity benefit (Beatty and Fothergill 2011). In addition to this analysis, household and individual level data have been combined in order to examine the extent of fuel poverty in households that contain one or more individuals with a particular type of disability (for example, a visual impairment). Payment methods have also been considered as a result of feedback on the first draft of this report.

Within the field of disability studies there are many debates about terminology (see for example Barnes and Mercer 2010 or Campbell and Oliver 1996). The authors wish to stress that one of the limitations of secondary analysis is that variables, categories and descriptors are set by those developing the original survey and dataset. For purposes of clarity and replicability, we use the original EHS terminology throughout this analysis, whilst recognising that these descriptions and categories may be narrow in focus, and at times use a 'medicalised'¹ model of disability.

There are a number of limitations to this analysis. Firstly, there are limitations associated with the two definitions of fuel poverty used within this report, and it is likely that the application of alternative definitions of fuel poverty such as the proposed Hills LIHC definition (Hills 2012) or the Minimum Income Standard based fuel poverty proposed by Moore (2012) will lead to different results. Secondly, there are arguments for 'uprating' the dataset by increasing benefits and tax allowances to current rates in order to simulate a more up to date dataset. Thirdly, and most importantly, as repeatedly discussed in the literature (for example Hills 2011, Baker 2011) the current calculation of fuel poverty classifies disability benefits such as Disability Living Allowance (DLA) as income. As such it is highly likely that our findings underestimate fuel poverty amongst disabled people. In order to counter this as a first step we have calculated fuel poverty rates where DLA is excluded from the calculation of income. Additionally, we have created a number of case study scenarios based on the data in the EHS to demonstrate the effects of excluding DLA from the analysis of fuel poverty. This is just a first exploratory step, and ideally a broader range of disability related benefits should be excluded (such as Attendance Allowance).

¹ Where disability is regarded as an 'individualised medical problem' and disregards ways in which society restricts participation in mainstream economic and social activities (Oliver and Barnes 2012: 22).

Executive summary

- This deliverable reports analysis that has been carried out on the 2010 to 2011 English Housing Survey (EHS).
- When applying the current UK fuel poverty definition, using 'full income', the majority of households containing someone with an illness or disability (79.6 per cent) are not classified as being fuel poor. However, a greater proportion of households containing disabled people are fuel poor compared with households that do not contain someone who disabled.
- When Disability Living Allowance (DLA) is removed from the calculation of income, fuel poverty rates tend to increase, although this varies by the measure of fuel poverty used, and other factors such as type of disability, region, tenure and household composition.
- Within the dataset fuel poverty rates vary by category of disability and by definition applied. The most notable difference is in the mental health category where a relatively high proportion of households are classified as being in fuel poverty under the basic income definition. 20 per cent of households containing at least one member with a mental health problem are classified as being in fuel poverty under the full definition, compared with 33.3 per cent under the basic income definition.
- Of all the fuel poor, 22.1 per cent (full income) or 20.6 per cent (basic income) of households contain a person with heart disease. Of all the fuel poor, 23 per cent (full income) or 24.3 per cent (basic income) of households contain a person with a breathing 'disability'. Of all the fuel poor, 44.1 per cent (full income) or 43 per cent (basic income) of households contain a person with a mobility 'disability'.
- Using either definition of fuel poverty, rates are the highest amongst households containing someone with a disability or long term illness in the East and West Midlands, North West, North East and Yorkshire and the Humber.
- By using an After Housing Costs indicator of the poverty line (below 60 per cent median income) the levels of fuel poverty are very similar for households with or without a member with a disability or illness. However, it is noteworthy that the way in which disability benefits are treated under the calculation of fuel poverty is likely to under estimate levels of fuel poverty amongst disabled people in receipt of disability related benefits, and if this was adjusted, the 42.8 per cent of households containing a disabled person who are below the poverty line, and in fuel poverty would be very likely to increase.
- Fuel poverty levels vary by household composition type (combined with the presence of a disability). In some households, for example, single households with someone aged over 60 the fuel poverty levels are relatively similar regardless of whether the occupant has a long term illness or disability. On the other hand, the results are more varied in other types of households, for example, in a single household containing someone who is under 60, 36.6 per cent of those containing someone with a long term illness or disability are in fuel poverty under the full income definition, and 53.5 per cent under the basic income definition (compared with 21.4 and 24.4 per cent respectively for households that do not contain someone with a disability or long term illness).
- In the case of both indicators of disability the fuel poverty rates in the private rented sector are the highest (35-36 per cent depending on the indicator used, using the basic income definition).
- Fuel poverty rates are highest amongst all households that pay energy bills using pre payment methods, and are highest amongst households containing someone with a long term illness or disability.

Methodology

The research has carried out a secondary data analysis of the 2010 to 2011 English Housing Survey (EHS). The EHS is a repeated cross-sectional study that “collects information about people’s housing circumstances and the condition and energy efficiency of housing in England” (Department for Communities and Local Government, n.d.a: 4). Data is collected at the individual and household level in a multi-stage process; firstly, an initial interview survey of approximately 17,000 households is conducted, followed by a physical inspection of a sub-sample of approximately 8,000 dwellings. Only the EHS household data has been used in analysis. The table in Annex 1 provides a full overview of the variables used from the EHS household dataset, as well as a description of any data transformations that have taken place, such as aggregating data from lower level individual files for analysis at the household level. All results presented are based on crosstabulations and are statistically significant at the 99.9 per cent level. All of the statistics presented in this report are national estimates; the EHS grossing factors have been applied to data, which have been calculated to “compensate for the design of the sample i.e. the over sampling of some dwellings and under sampling of others; and take account of non-response bias” (Department for Communities and Local Government, n.d.a: 20).

Measurement of disability

The EHS gathers information on the number of self-reported and registered disabled people in each household using two broad disability variables, asked at the household level. Firstly, the household reference person (HRP)² is asked if anyone in the household has a long standing illness or disability (termed ‘self reported disability’ within this report) (see Annex Two), and secondly, the HRP is asked if they or their partner are registered disabled³. For this second variable, the numbers are substantially lower. One explanation for these lower figures is the process that individuals must go through and criteria that they must meet in order to be registered disabled. Given the level of difference between the two general disability variables, both will be explored in relation to fuel poverty. In addition, aggregated data from the individual file on the numbers of households containing people with specific categories of disability will be analysed.

Fuel poverty definitions used

The following definition of fuel poverty has been applied in the research: *“a household is said to be in fuel poverty if it needs to spend more than 10% of its income on fuel to maintain an adequate level of warmth (usually defined as 21 degrees for the main living area, and 18 degrees for other occupied rooms)”* (Department of Energy and Climate Change, 2010: 1).

The two different classifications of income, ‘full income’ and ‘basic income’, have been used throughout the research to examine the effect on disabled households. These classifications of income are defined as follows:

- The ‘basic income’ definition is a measure of household income and is calculated by adding the personal incomes of every member of the household together plus any benefit payments that the household receives (from private source, state benefits and savings) but

² In the EHS, the Household Reference Person is the “householder”, i.e. the person in whose name the accommodation is owned or rented. For joint householders, the HRP is the person with the highest income. Where incomes are the same, the older person is defined as the HRP. (Department for Communities and Local Government, n.d.a)

³ It should be noted that ‘Registered disabled’ is not an official status. The EHS question asks ‘Are you/they registered as a disabled person (or as visually impaired) with the local council/ social services?’

excludes income related directly to housing (Department of Energy and Climate Change, 2010:11).

- The 'full income' definition is the official headline figure. In addition to the basic income measure, it includes income related directly to housing (i.e. Housing benefit, Income Support for Mortgage Interest (ISMI), Mortgage Payment Protection Insurance (MPPI) and Council Tax Benefit (CTB) (Department of Energy and Climate Change, 2010: 11).

Classification of Disability Living Allowance as income

Treating benefits such as Disability Living Allowance (DLA) as income for the purposes of poverty calculations is controversial as it is argued that this exaggerates disabled people's incomes, artificially pushing some above the poverty threshold (e.g. see Parckar 2008, Bevan Foundation 2009). The main criticism here is that benefits such as DLA are not disposable income, but are in fact specifically there to 'help with the extra costs caused by a disability' (DWP 2013). Arguably then, as with the treatment of housing benefit under the full income definition of fuel poverty, disability benefits such as DLA are likely to be spent on specific goods and services, rather than being available to pay for energy costs. However, at present, benefits such as DLA are included in household income calculations in the fuel poverty methodology. In the fuel poverty review Hills argues that "classifying DLA as general income for measuring fuel poverty implicitly assumes that its recipients are better off than those who do not receive it" (Hills, 2012: 92). Hills further states "removing DLA from the income calculation would be appropriate, reflecting more general arguments about the way in which its inclusion leads to understatement of the proportion of disabled people who have low incomes" (2012: 92), a position which Baker (2011) also supports, stating that fuel poverty would increase considerably for people with disabilities if disability benefits were not treated as income. Based on the arguments provided by Baker (2011) and Hills (2012), in addition to the research by Monteith *et al* (2009) which examines the exclusion of DLA on child poverty rates, this report explores disability in relation to the conventional calculation of fuel poverty, with DLA treated as income, but additionally, in relation to a modified fuel poverty definition that excludes DLA from income. A set of new basic and full household income variables, and new fuel poverty flags and indexes were created with DLA payments subtracted, enabling the analysis to be re-run with a modified measurement of income. The results of this analysis are not reported in full as with the analysis of the conventional calculation of fuel poverty, instead comparisons are drawn within each section of the report. This is just a first step, and further disability related benefits could also be removed. However, the purpose of removing DLA is to indicate how the inclusion of such benefits in fuel poverty calculations alters fuel poverty rates. It may also indicate where fuel poverty levels may rise under the transition from DLA to Personal Independence Payments (PIP) given the likely reduction in PIP caseload (see for example Kaye *et al* 2012, Scope 2012).

Limitations of the data

There are a number of limitations with the EHS data, including the method for calculating fuel costs, which Moore (2012) has stated is too generalised. In addition, Moore criticises the use of average fuel prices, which he states is likely to significantly underestimate fuel poverty as the fuel poor tend to be on higher than average tariffs for their region and payment type. In relation to the disability variables, there are discrepancies between the aggregated lower level disability variables and the household variables, as displayed in Table 1. In addition, the aggregated categories of disability are limited in sample size (see Annex Two), and so some caution should be applied to the disaggregated analysis. These data issues will require further investigation in order to ascertain the validity of the disability variables.

Table 1: Variation in disability variable counts

Variable name	Hhold contains person(s) registered disabled	HRP or Partner registered disabled	Hhold contains person(s) with long-stdng illness, disab/infirmity	Anyone in hhold have illness or disability?
Level of data	Aggregated person level data	Household level data	Aggregated person level data	Household level data
Count	2202657	1874723	10116937	6319900
Percent	10.20	8.68	46.8	29.3

In addition to this the way in which households that contain members with multiple disabilities (or multiple members with disabilities) are treated within this data analysis must be described. There are several ways in which the responses of disabled people can be counted more than once in the calculation of fuel poverty rates, thus potentially artificially increasing levels of fuel poverty. Firstly, this could occur if a household contains more than one person with the same type of disability. However, due to the aggregation method used, if multiple people in a household report having the same type of disability, their household will only be counted once. Whilst this avoids artificially increasing the occurrence of fuel poverty, it may also mask subtle differences between households containing only one person with a mobility disability, for instance, compared with a household containing three people with mobility disabilities. Table 2 presents information on the percentage of people within a household reporting each disability category. As can be seen, within households that contain someone with a disability, the majority contain only one person reporting a certain disability category.

Table 2: Household reporting each type of long term illness or disability

Number of people in HH	Valid percentage of people reporting that they have each long term illness or disability							
	Vision (%)	Hearing (%)	Learning difficulty (%)	Mobility (%)	Breathing (%)	Heart disease (%)	Mental health (%)	Other (%)
0	92	93	96	59	75	81	90	55
1	7	7	3	35	22	17	9	37
2	1	1	0	5	2	2	1	7
3	0	0	0	1	1	0	0	1
4	0	0	0	0	0	0	0	0
5	0	0	0	0	0	0	0	0
6	0	0	0	0	0	0	0	0
7	0	0	0	0	0	0	0	0

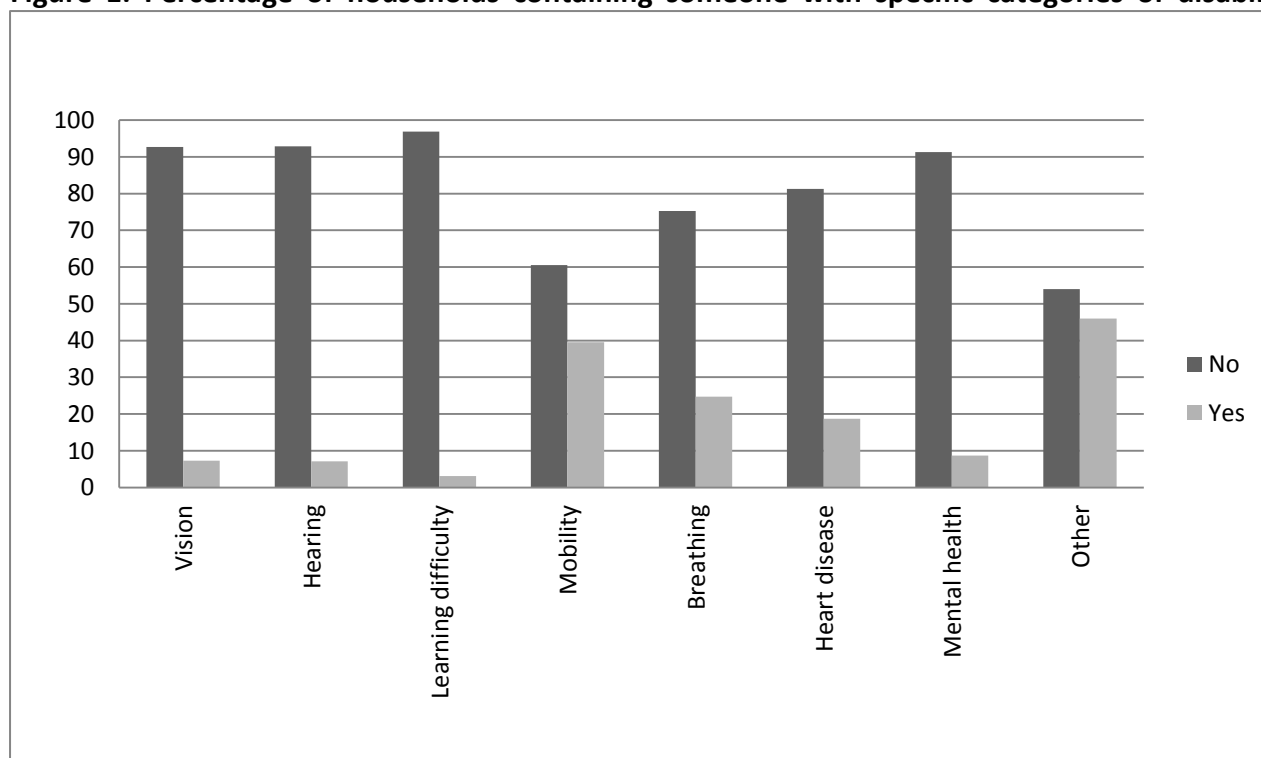
A second and third way in which a household may be counted multiple times in fuel poverty statistics, in relation to categories of disability, is if a) a household contains multiple disabled people, reporting different types of disability, and/or b) a household contains someone with more than one reported category of disability. These are weaknesses of the aggregation method used. Nevertheless, over fifty per cent of households containing a disabled person are single person households reporting one category of disability.

Findings

Headline results

Using aggregated data it is evident that the majority of households do not contain anyone with any form of disability (see Figure 1). However, within households that do contain someone with a disability, the frequency differs dramatically depending on the specific category of disability, with forty per cent of households containing at least one person with a mobility disability, whilst only three per cent of households contain someone with a learning difficulty.

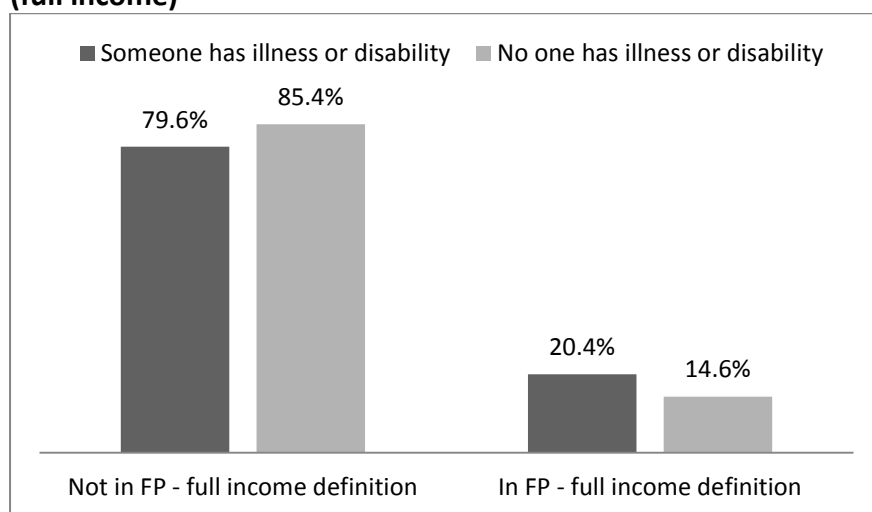
Figure 1: Percentage of households containing someone with specific categories of disability⁴



When applying the current UK fuel poverty definition, using 'full income', the majority of households containing someone with a long term illness or disability (79.6 per cent) are not classified as being fuel poor, however, a greater proportion of households containing a member with a long term illness or disability are fuel poor compared with those that do not (Figure 2). The removal of DLA from household income results in a marginal, but statistically significant ($p < .001$) increase (1.4 per cent) in fuel poverty within households that contain someone with an illness or disability.

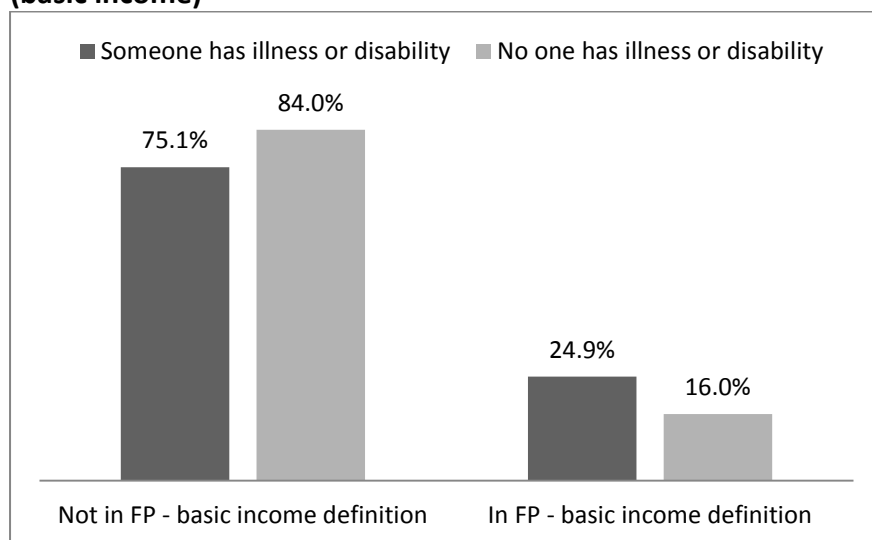
⁴ It must be noted that it is unclear within the EHS data what the 'other disability or illness' category refers to, and as such is not subjected to individual analysis

Figure 2: Fuel poverty and households containing someone with a long term illness or disability (full income)



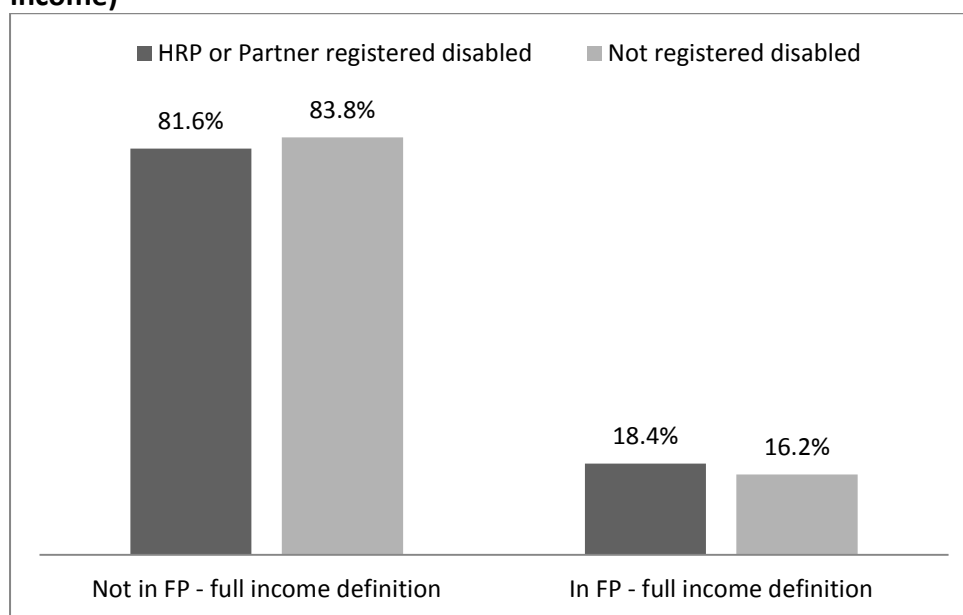
By comparison, applying a 'basic income' definition of fuel poverty (Figure 3) marginally increases the proportion of households containing a member with a long term illness or disability that are classified as being fuel poor, with almost 25 per cent of households now in fuel poverty, compared with nearly 20 cent using a 'full income' definition. Excluding DLA from income calculations results in an extra 2.1 per cent of households containing someone with a long term illness or disability being classified as fuel poor, under a basic income definition. McNemar's test indicates the increase in fuel poverty is statistically significant ($p < .001$).

Figure 3: Fuel poverty and households containing someone with a long term illness or disability (basic income)



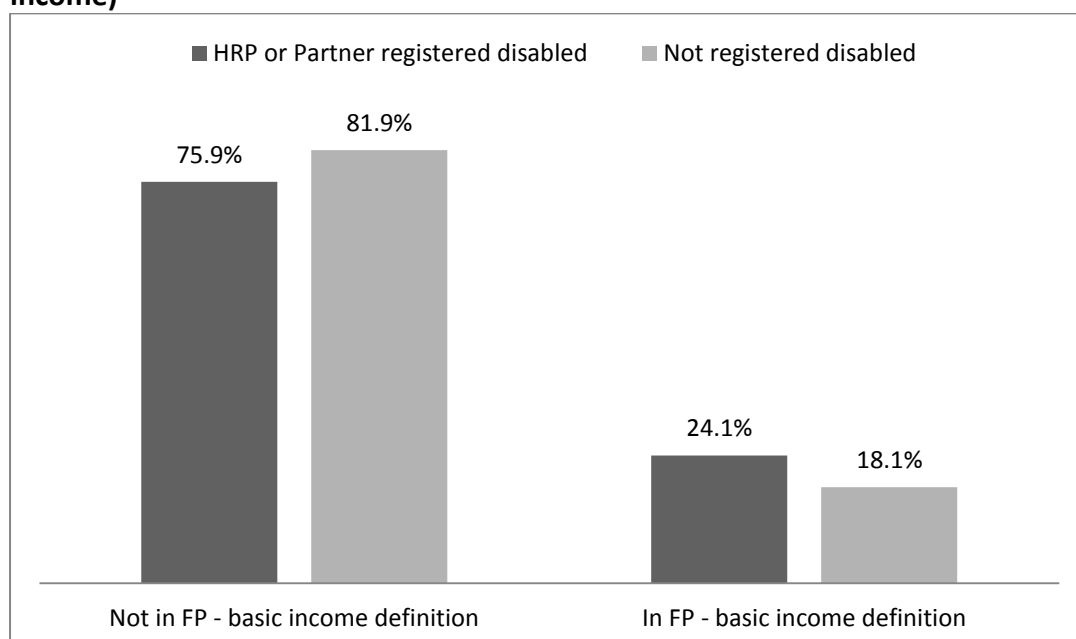
Measuring disability in terms of the HRP or partner being registered disabled (Figure 4) results in marginally lower levels of fuel poverty, in both 'full income' and 'basic income' scenarios (18.4 per cent of households where the HRP or partner is registered disabled are in fuel poverty). Removing DLA from household income has a stronger effect on fuel poverty levels in households where the HRP or partner is registered disabled compared with the previous disability variable, with a statistically significant ($p < .001$) increase in fuel poverty of 3.6 per cent.

Figure 4: Fuel poverty and households where the HRP or partner is registered disabled (full income)



However, the same pattern can be observed in terms of a 'basic income' measure (Figure 5) producing higher levels of fuel poverty than a 'full income' measure, with an increase of around six per cent. With DLA payments excluded from income, an additional 5.8 per cent of households where the HRP or partner is registered disabled are classified as fuel poor. This increase in fuel poverty is statistically significant ($p < .001$).

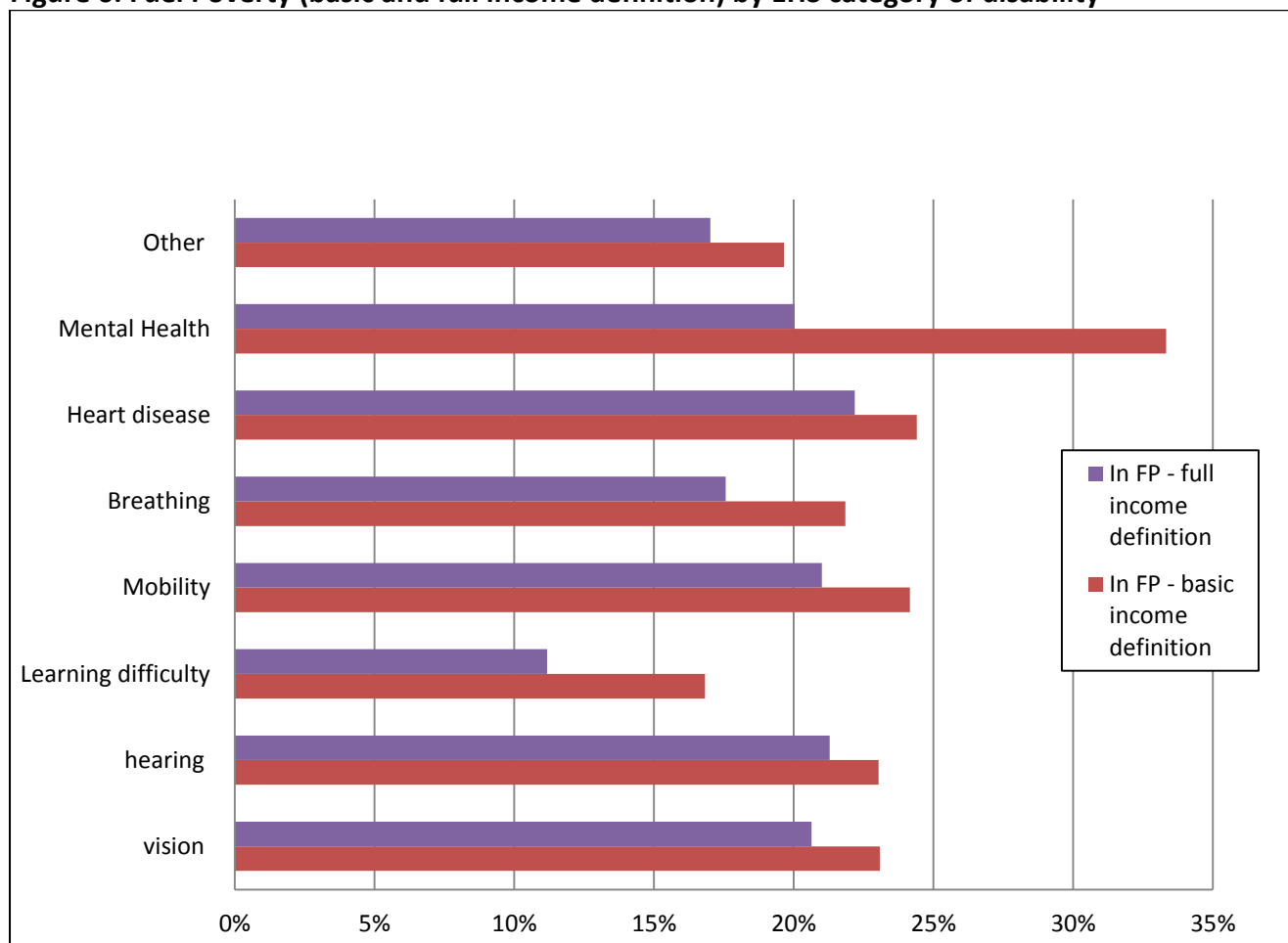
Figure 5: Fuel poverty and households where the HRP or partner is registered disabled (basic income)



Fuel poverty rates by EHS category of disability⁵

Figure 6 presents an overview of fuel poverty amongst households with at least one member with any of the EHS categories of disability. As noted in the introduction some of the terminology here may be rather ‘medicalised’, however, for replicability purposes we have continued to use the EHS categories and definitions. It is immediately apparent that fuel poverty rates vary by category of disability and by definition applied. The most notable difference here is in the mental health category where 20 per cent of households containing at least one member with a mental health problem are classified as being in fuel poverty under the full definition, compared to 33.3 per cent under the basic income definition. The exclusion of DLA from income results in an increase in fuel poverty rates across each category of disability, with increases of between 0.5 and 3.3 per cent. The lowest increase is found in the hearing and other categories, with a marginal increase of 0.5 per cent under a full income definition. By contrast, the highest increase occurs within the mental health category, with fuel poverty increasing by 3.3 per cent under a basic income definition.

Figure 6: Fuel Poverty (basic and full income definition) by EHS category of disability



⁵ Some categories of disability have limited samples (see Annex Two), and so some caution should be applied to the disaggregated analysis.

These figures can be broken down by the two definitions of fuel poverty, and by the EHS categories of disability. Figure 7 shows the comparison of fuel poverty rates amongst households without at least one member with a mental health problem compared against those that do contain one. Once again, the results are very different for households containing a person with a mental health problem when the basic income measure is applied, whereas it makes very little difference to households that are not in this situation (20 per cent compared to 21.1 per cent). Of all the fuel poor, 9.3 per cent (full income) or 13.1 per cent (basic income) of households contain a person with a mental health problem.

Figure 7: Fuel poverty (full and basic income definitions) and mental health

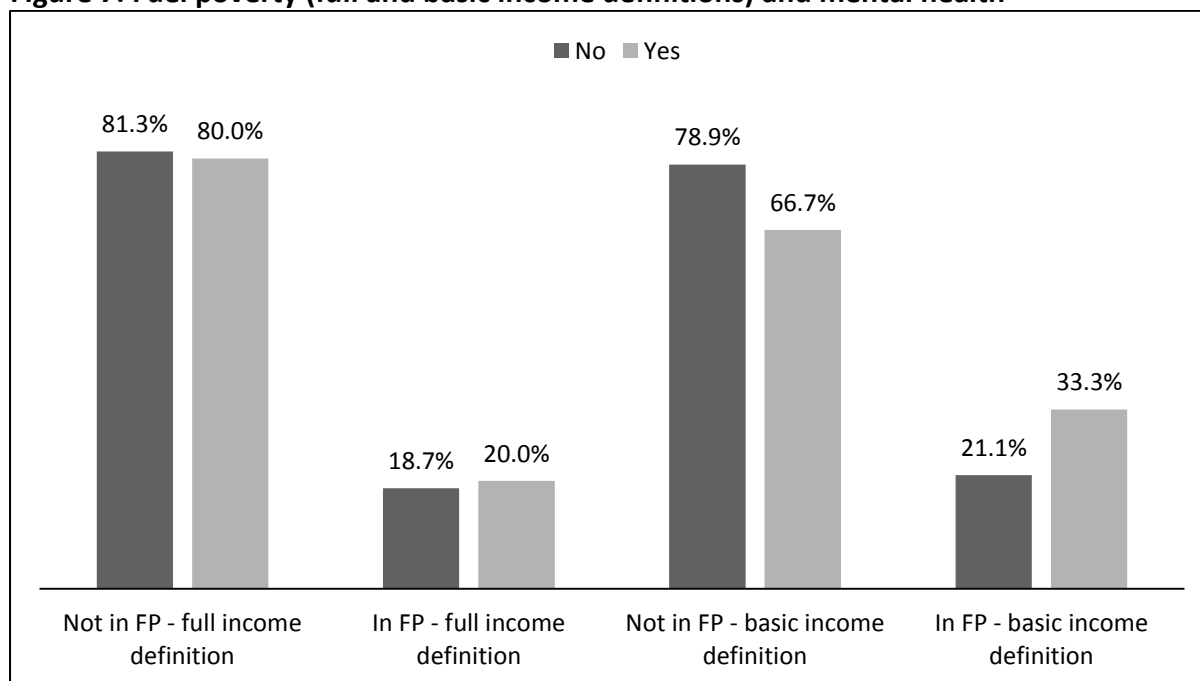


Figure 8 presents the same results for households containing at least one person with heart disease. The differences between the full income and basic income definitions still exist, but are not as noticeable as the mental health category. Under the full income definition 22.2 per cent of households containing a member with heart disease are in fuel poverty compared with 24.4 per cent under the basic income definition. Additionally, of all the fuel poor, 22.1 per cent (full income) or 20.6 per cent (basic income) of households contain a person with heart disease.

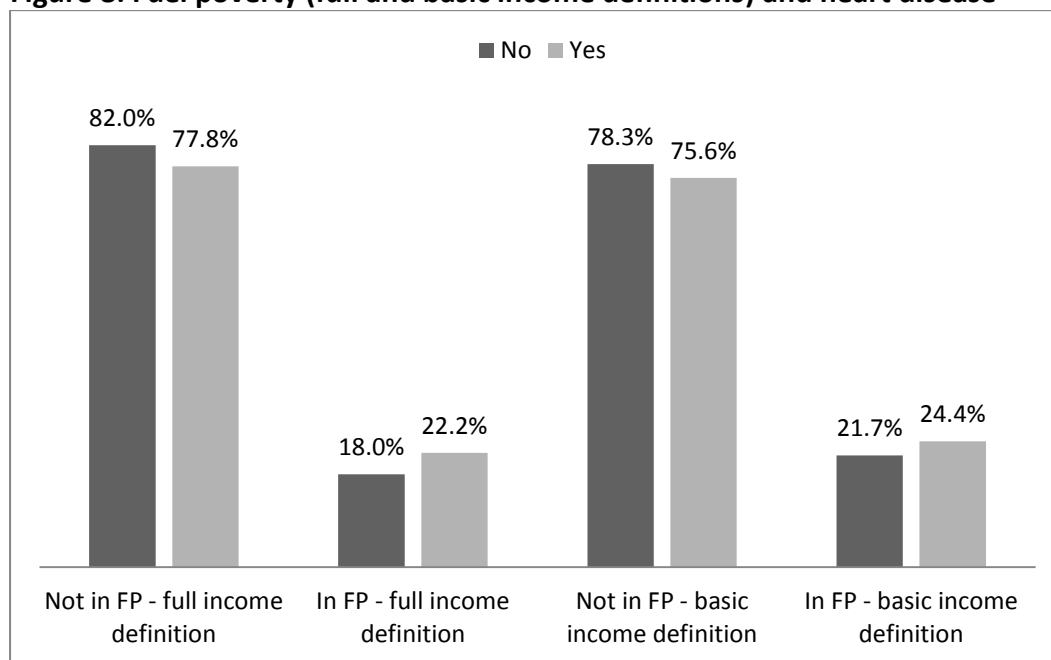
Figure 8: Fuel poverty (full and basic income definitions) and heart disease

Figure 9 presents the results for households containing at least one person with 'breathing difficulties'. Here, under both definitions there is a slightly lower proportion of households containing a person with a breathing disability in fuel poverty than those not containing one. However, these relatively modest results should not be taken to mean that this is not an important finding; of all the fuel poor, 23 per cent (full income) or 24.3 per cent (basic income) of households contain a person with a breathing disability.

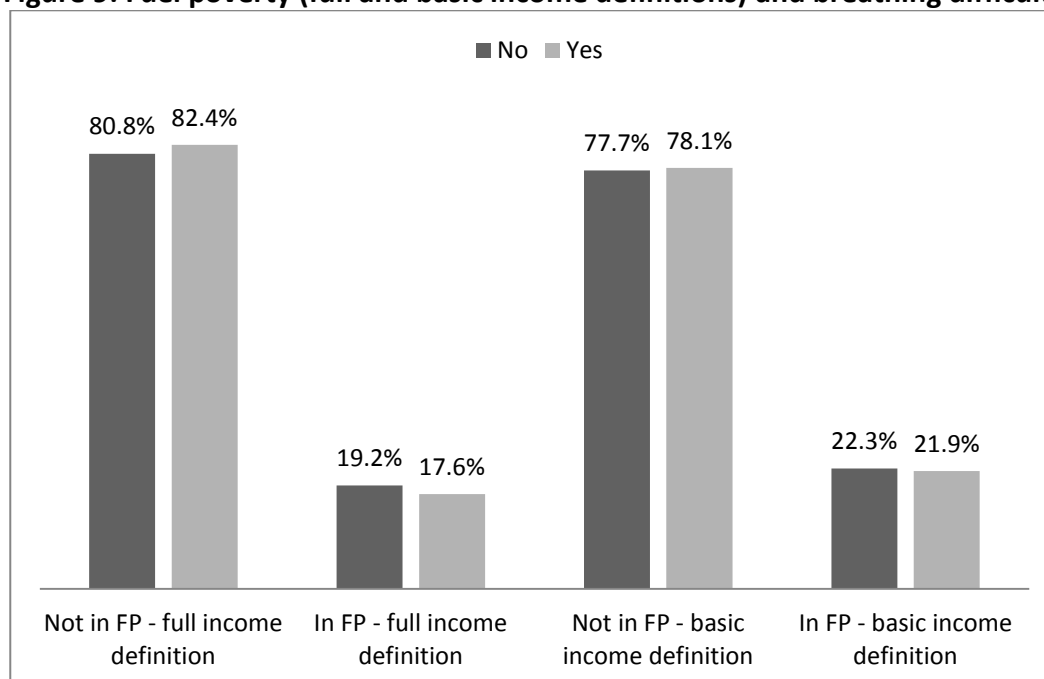
Figure 9: Fuel poverty (full and basic income definitions) and breathing difficulties

Figure 10 presents the results for households containing at least one person with a 'mobility disability'. Once again, a slightly higher proportion of households (24.2 per cent compared to 21 per cent) containing a person with a mobility disability and in fuel poverty is evident when the basic income definition is used. In addition to this of all the fuel poor, 44.1 per cent (full income) or 43 per cent (basic income) of households contain a person with a mobility disability.

Figure 10: Fuel poverty (full and basic income definitions) and mobility

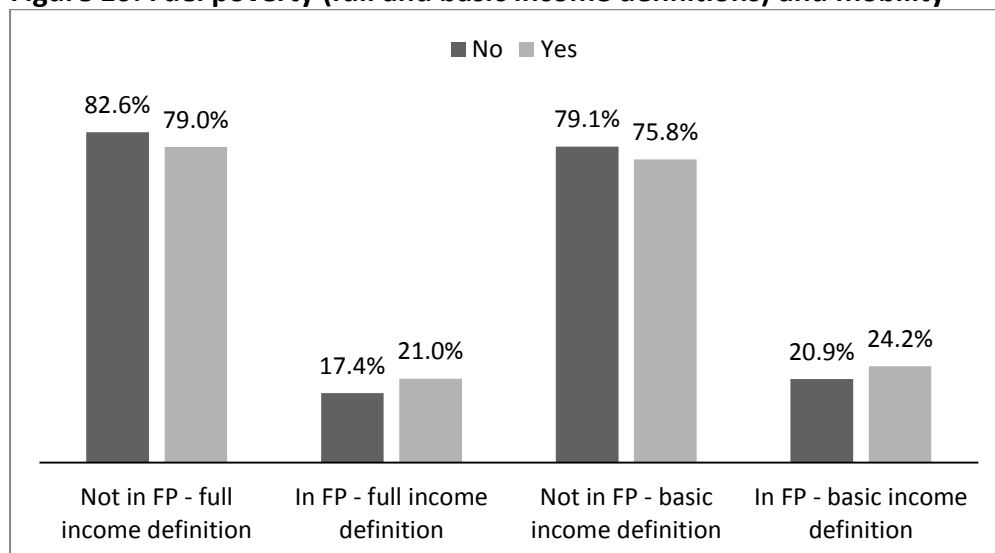


Figure 11 presents the results for households containing at least one person with a learning disability. The results from this figure and Figure 6 suggest that under these measures and definitions this is the EHS category with the lowest levels of fuel poverty. Of all fuel poor households 1.8 per cent (full income) and 2.3 per cent (basic income) contain a person with a learning disability (as demonstrated in Figure 1, the proportions in this category are relatively low compared to other EHS groups). However, these findings should not be taken to mean that fuel poverty is not an issue amongst this group. Even under the full income measure over one in ten households containing a person with a learning disability are in fuel poverty.

Figure 11: Fuel poverty (full and basic income definitions) and learning difficulties

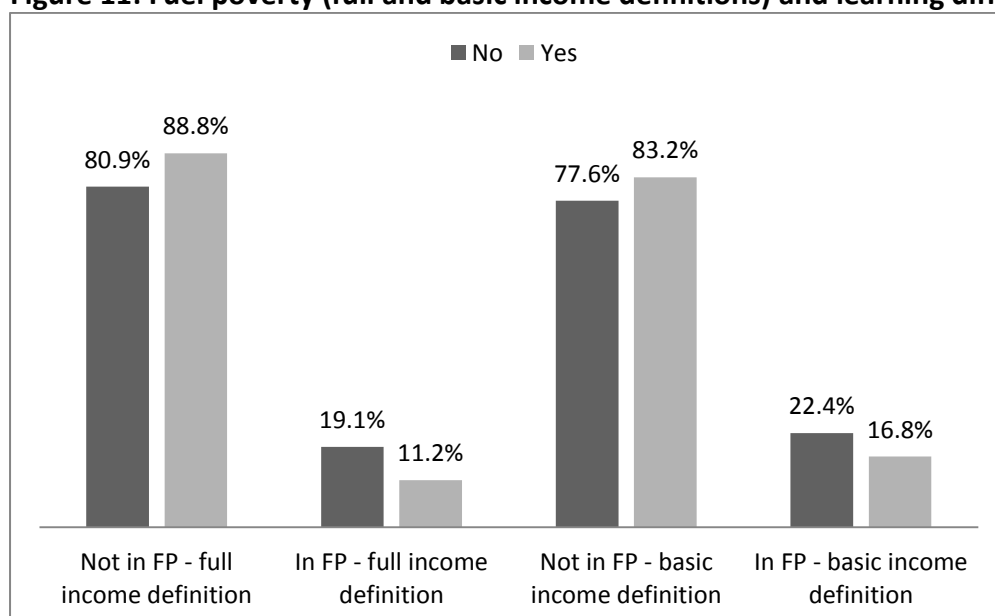


Figure 12 presents the results for households containing at least one person with a 'hearing disability'. The findings repeat the trend of many of the other EHS disability categories, with slightly higher levels of fuel poverty under the basic income definition (23 per cent for households containing a person with a hearing disability). Of all the fuel poor households 8 per cent (full income) and 7.3 per cent (basic income) contain a person with a hearing disability.

Figure 12: Fuel poverty (full and basic income definitions) and hearing

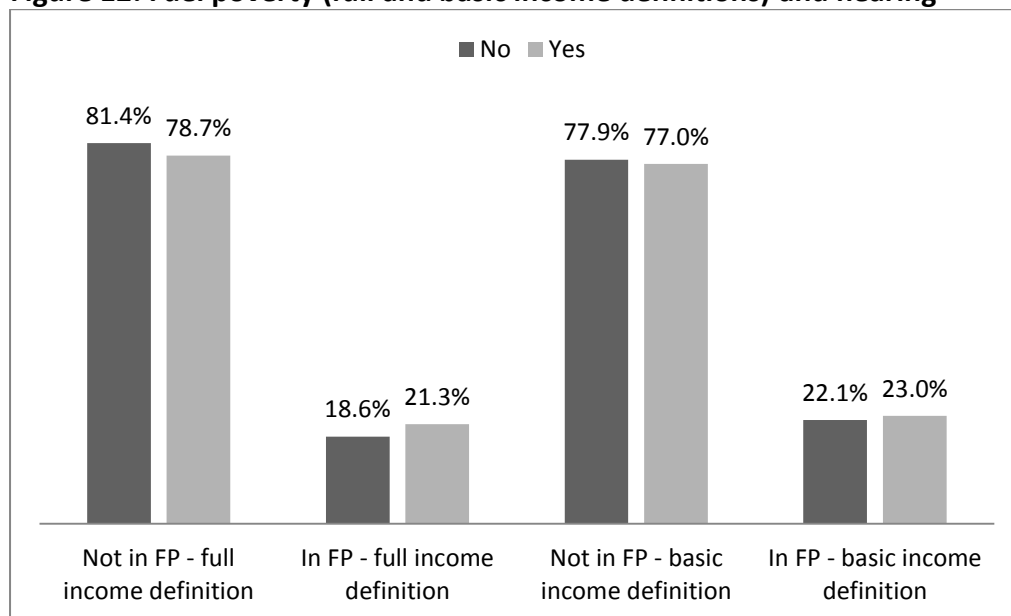
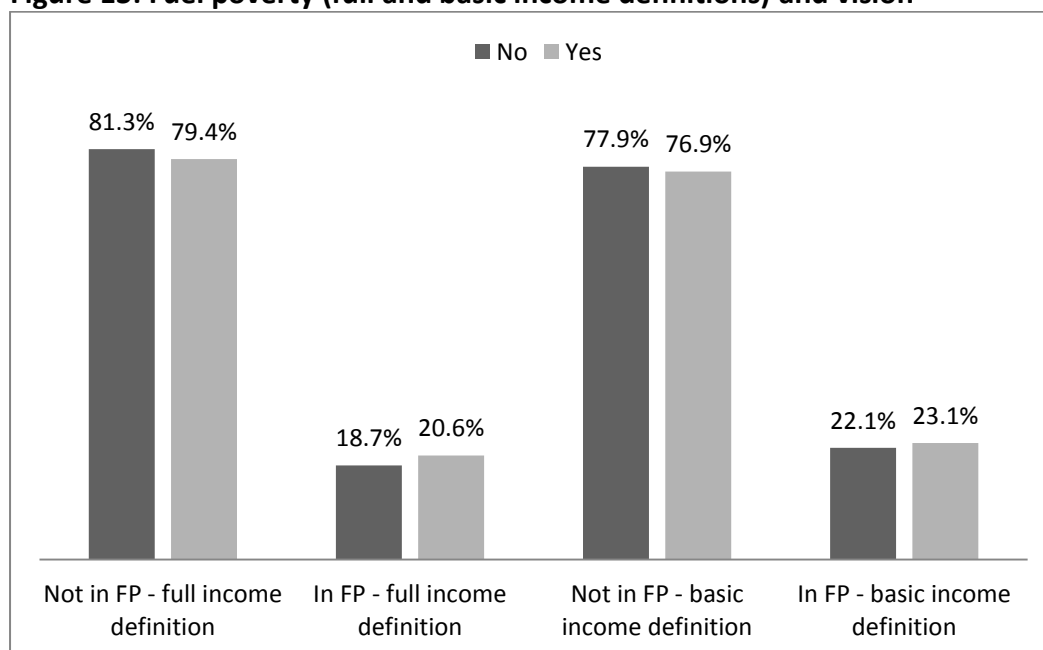


Figure 13 presents the results for households containing at least one person with a 'vision disability'. These results are very similar to the results in Figure 12, in terms of overall proportions of fuel poverty amongst this group, and the difference between the full and basic income definition. Of all fuel poor households 8 per cent (full income) and 7.6 per cent (basic income) contain a person with a vision disability.

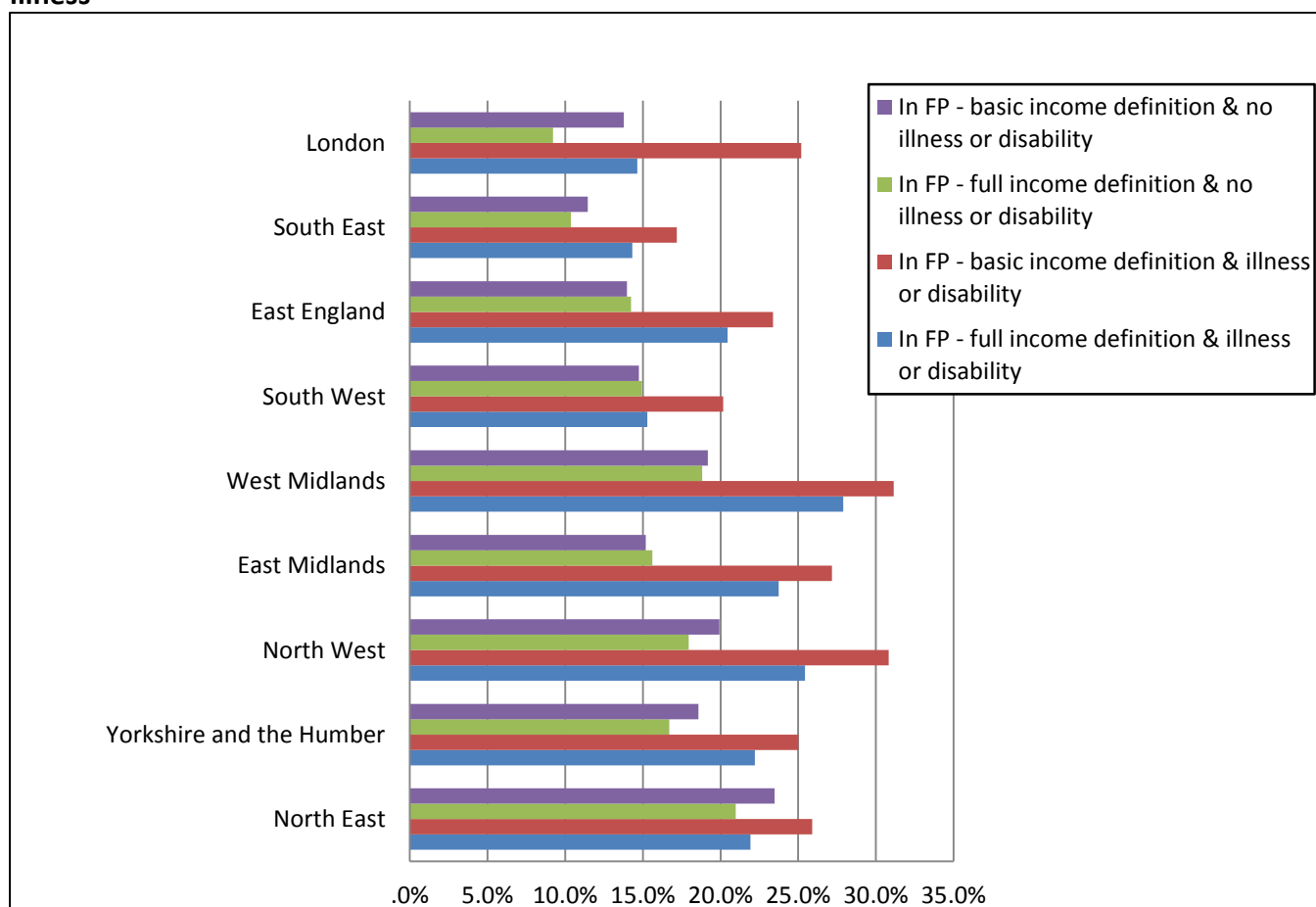
Figure 13: Fuel poverty (full and basic income definitions) and vision



Region

The two household level EHS variables of disability were used to analyse the relationship between fuel poverty and region using the basic and full income definitions of fuel poverty (Figures 14 and 15). As with other studies there are notable differences in fuel poverty across different regions under the different definitions. The trends identified below are broadly consistent with existing research (e.g. DECC 2012). Taking the broader category of disability or illness, the fuel poverty rates amongst households containing someone with a disability or illness are substantially higher than households without, especially when the basic income definition is applied. Using either definition of fuel poverty, rates are the highest amongst households containing someone with a disability or illness in the East and West Midlands, North West, North East and Yorkshire and the Humber. London is particularly interesting, with a difference of ten per cent in fuel poverty rates amongst households containing someone with a disability or illness when the basic income definition is applied.

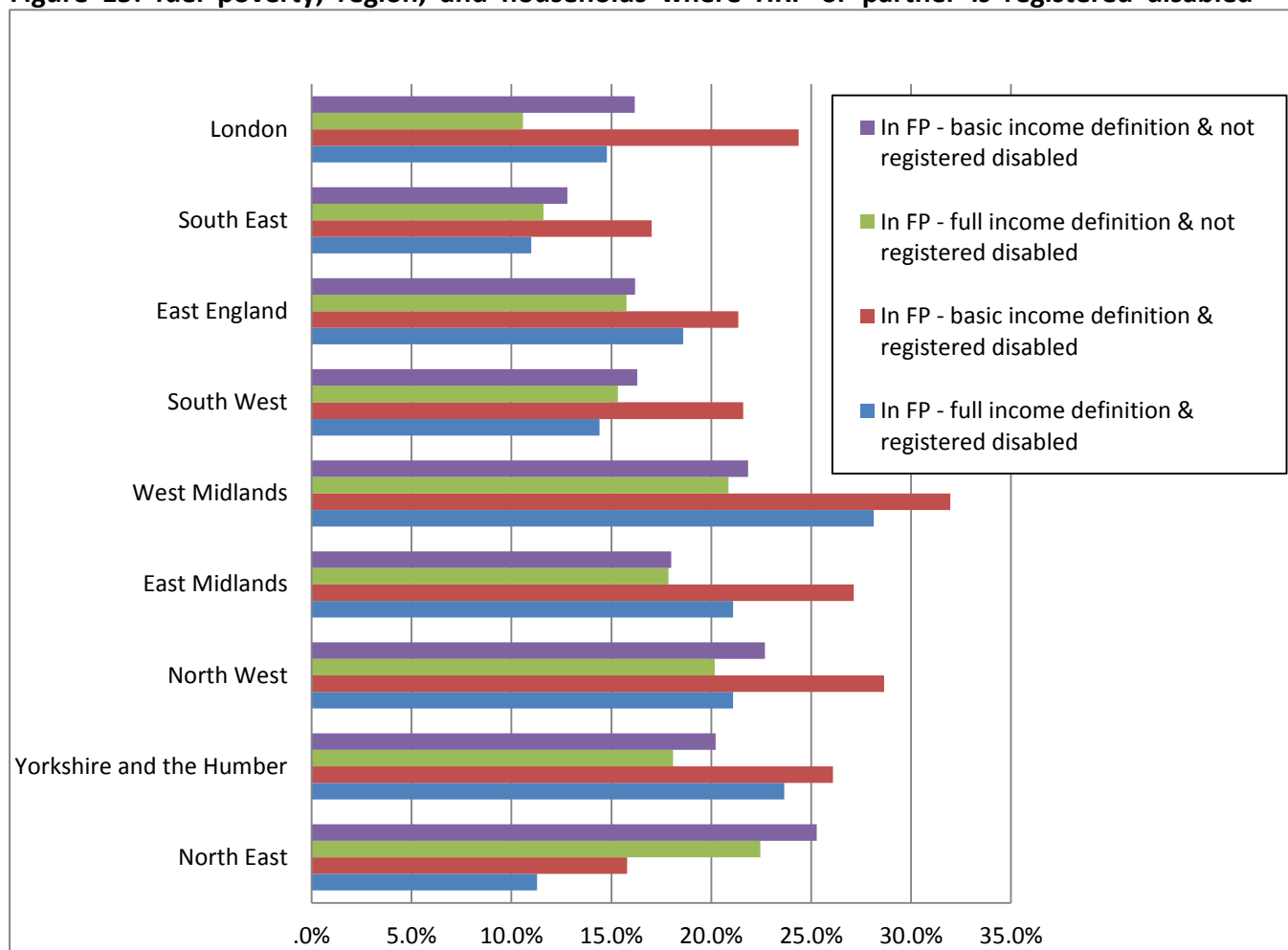
Figure 14: fuel poverty, region, and households containing someone with a disability or long term illness



Removing DLA payments from household income increases fuel poverty across all regions of England, with an overall average increase of 1.4 per cent when a full income definition is applied, and 2.2 per cent when a basic income definition is used. The highest increases under a full income definition are found in the North East and South West, with a rise in fuel poverty of 2.8 and 2.3 per cent respectively. Similarly, the highest increases under a basic income definition are found in the South West and North East, with a rise of 4 and 3.6 per cent respectively.

The more narrowly defined 'households where the reference person or partner is registered disabled' variable produces similar trends, with the highest fuel poverty levels being observed within households containing someone with a registered disability in the East and West Midlands Yorkshire and the Humber, and the North West. The results for the North East are interesting as the proportion of households in fuel poverty where the reference person or their partner is registered disabled is notably low, and requires further investigation.

Figure 15: fuel poverty, region, and households where HRP or partner is registered disabled



Fuel poverty levels increase across all regions of England when DLA payments are excluded from household income. The largest increases in fuel poverty under a full income definition occur in the North East and South West, with increase of 8.1 and 5.7 per cent respectively, whilst the largest increases in fuel poverty under a basic income definition occur in the North East and North West, with increases of 9.4 and 5.8 per cent respectively.

Poverty

Given the known association between poverty and disability (see for example Palmer 2011) the UK government's 'below 60% of median income' definition of poverty (DWP 2010) has been applied to households containing disabled people, and subsequent fuel poverty rates assessed. This measure can be applied in relation to 'After Housing Costs' (AHC) median income, or 'Before Housing Costs' (BHC) median income and there is considerable debate surrounding which indicator is most appropriate (see for example Moore 2012), and here both measures are applied (Figures 16-19).

Figure 16: fuel poverty by after housing costs, median income and households containing a person with a long term illness or disability

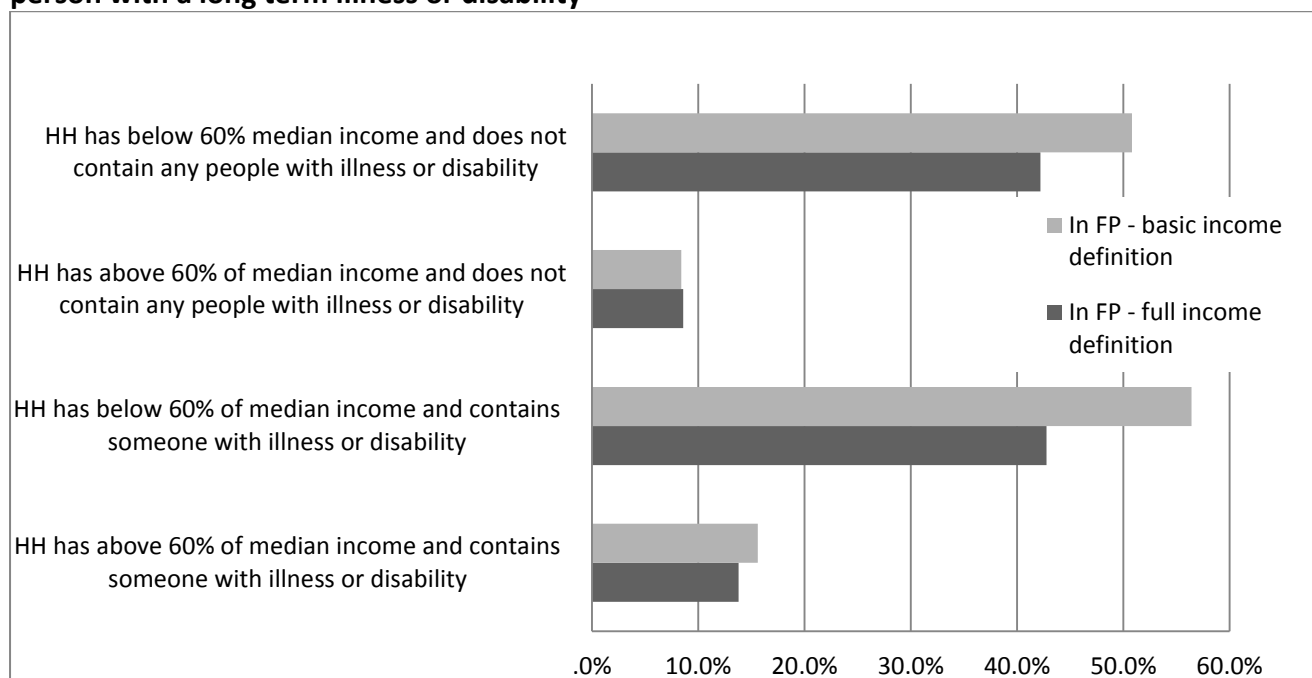
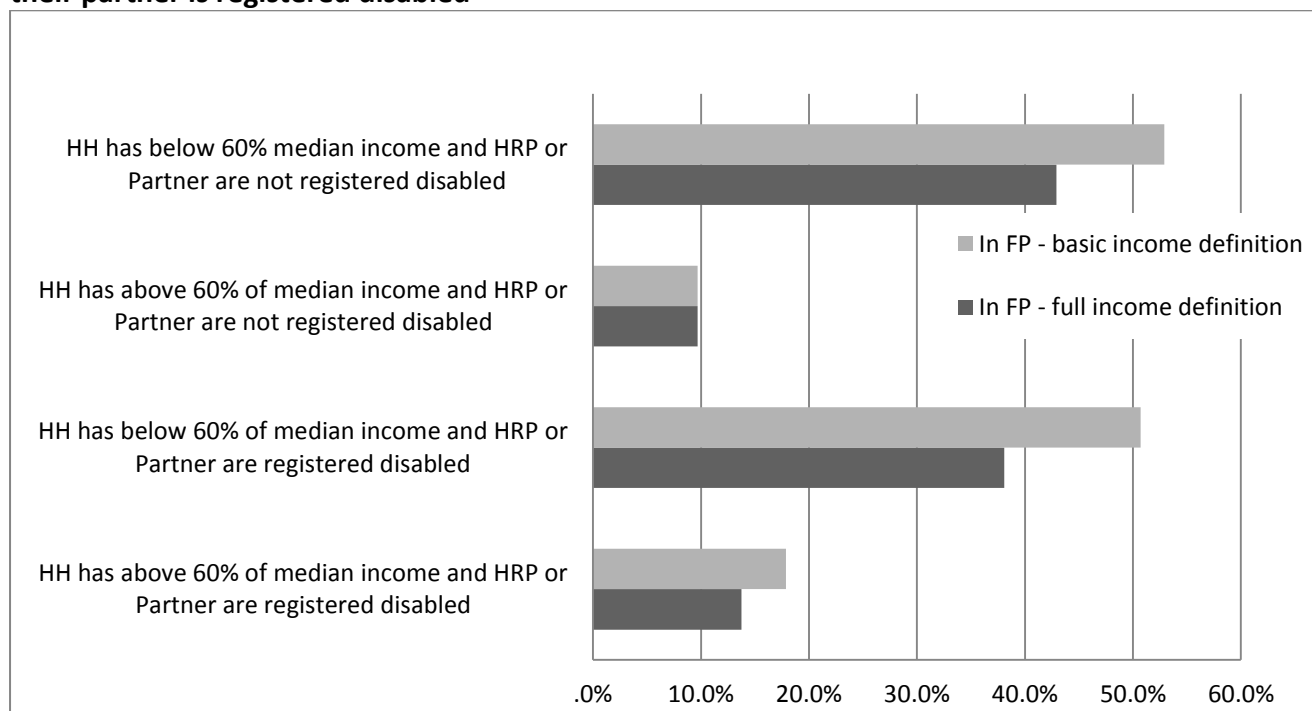


Figure 17: fuel poverty by after housing costs median income and households where the HRP or their partner is registered disabled



By using the AHC in relation to households containing those with long term illnesses or disabilities, the levels of fuel poverty are very similar to households that do not contain anyone with a long term illness or disability (Figure 16). Excluding DLA from household income does not make a substantial difference to the levels of fuel poverty in households that contain a person with an illness or disability, with increases of between 1.2 per cent and 2.2 per cent across all groups. The results for the narrower disability variable follow a similar trend to Figure 16. The high levels of fuel

poverty amongst those below the poverty line demonstrate the relationship between low income and fuel poverty (and also the role that household income plays in calculations of fuel poverty). However, in both Figures 16 and 17 it is interesting to note that there is a higher level of fuel poverty amongst households with a disabled member that are above the poverty line (15.6 and 17.9 per cent for the basic income measures in Figures 16 and 17 respectively) than those that do not contain a disabled person. The increase in fuel poverty after DLA is excluded from income is more substantial in households where the HRP or partner is registered disabled. For households below the median income threshold under a full and basic income measure, there is an increase in fuel poverty of 4.2 and 6.5 per cent respectively, whilst for households above the threshold, fuel poverty increases by 3.5 per cent under a full income measure, and 5.6 per cent under a basic income measure.

Figures 18 and 19 present the results for the Before Housing Costs measure of poverty and the presence of a household member with a disability or long term illness. By using this measure the proportion of households in fuel poverty that are below the 60 per cent median income containing someone with a long term illness or disability is higher than the AHC measure at around 58 per cent when the full income measure is applied. Once again, this highlights some of the issues associated with the way in which such threshold indicators are developed, and the types of income included within them. As with the AHC analysis of households containing a person with a long term illness or disability, the removal of DLA from income only results in marginal increases in fuel poverty levels of between 1.4 and 2.4 per cent. By comparison, the removal of DLA has a large impact on households where the HRP or partner is registered disabled, with an increase in fuel poverty levels of 3.4 per cent and 6.2 per cent in households above the median income threshold, under a full and basic income measure respectively. In households below the threshold, fuel poverty increases by 4.7 per cent for a full income measure, and by 4.4 per cent under a basic income measure.

Figure 18: fuel poverty by before housing costs median income and households containing a person with a long term illness or disability

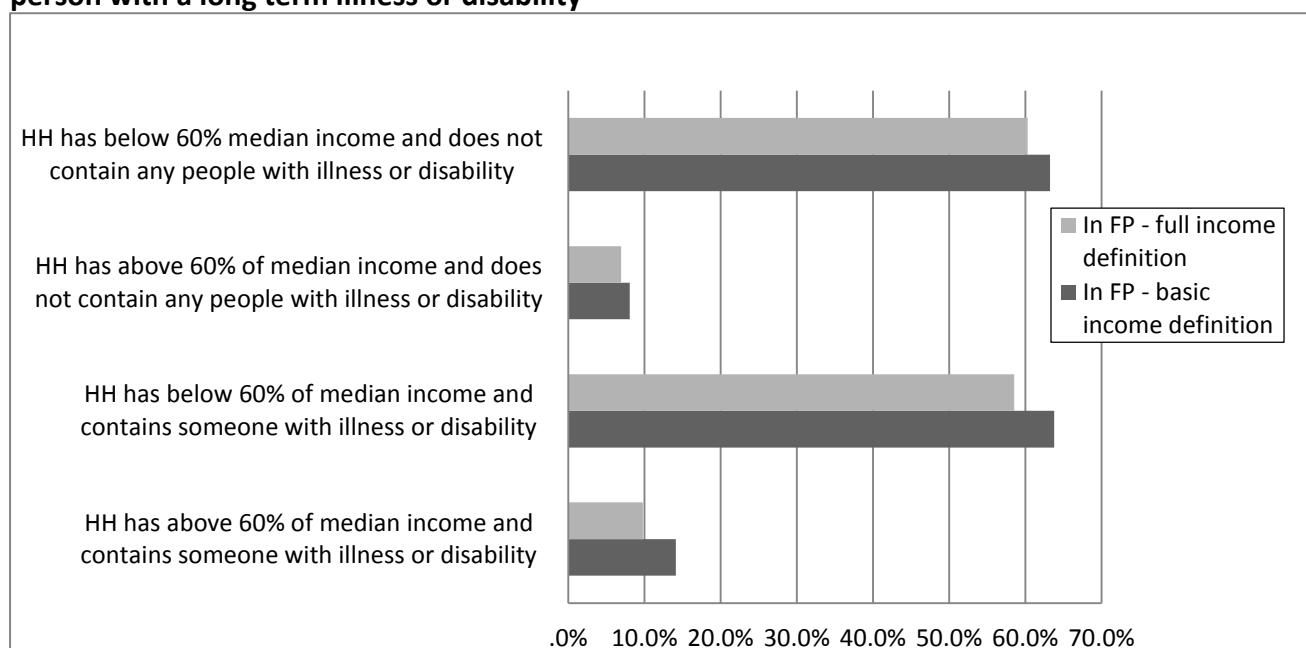
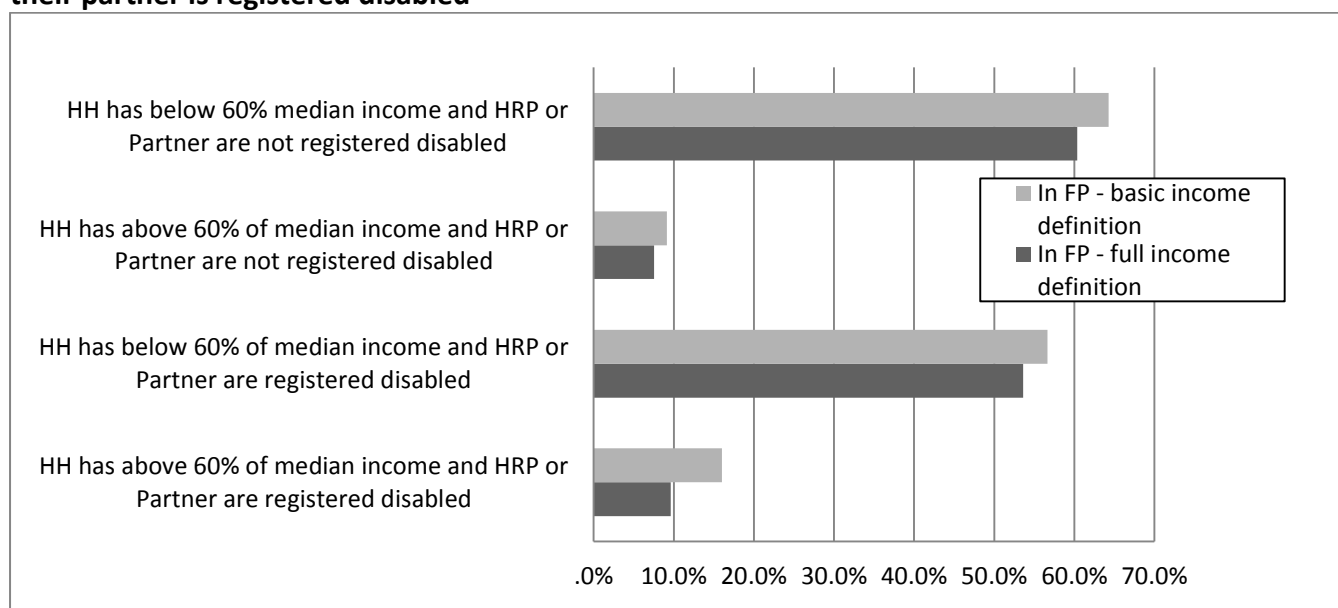


Figure 19: fuel poverty by before housing costs median income and households where the HRP or their partner is registered disabled

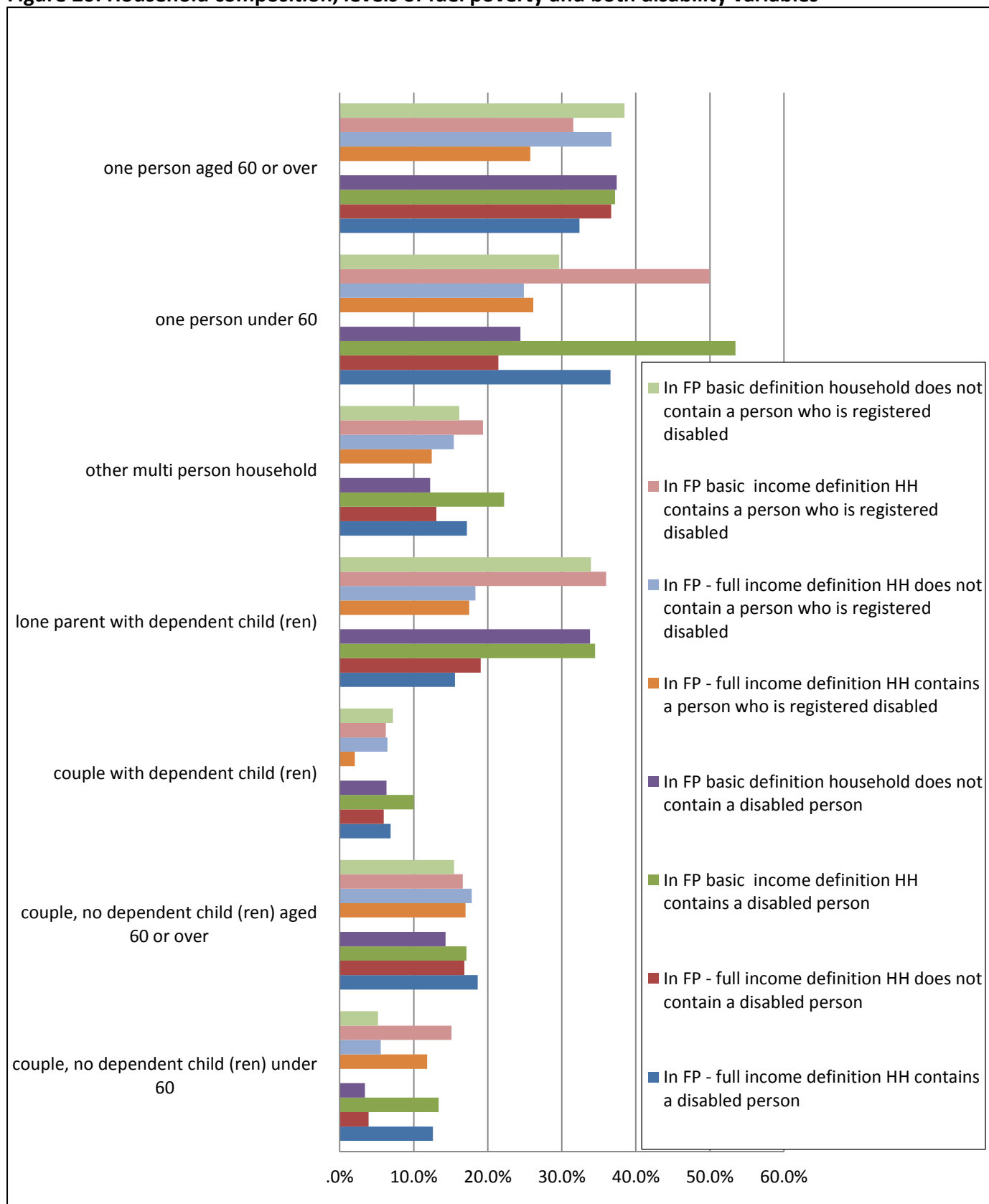


Household composition

Figure 20 demonstrates fuel poverty levels amongst different household types, and whether or not the household contains someone with a disability (using both measures). In some households, for example, single households with someone aged over 60 the fuel poverty levels are relatively similar regardless of whether the occupant has an illness or disability, and the two measures of fuel poverty. Indeed, the high levels of fuel poverty results for this household type correspond with previous research (e.g. DECC 2012) regarding the prevalence of fuel poverty in single pensioner households. The results are more varied in other types of households, for example, in a single household containing someone who is under 60, 36.6 per cent of those containing someone with a long term illness or disability are in fuel poverty under the full income definition, and 53.5 per cent under the basic income definition (compared with 21.4 and 24.4 per cent respectively for households that do not contain someone with a disability or illness). Similarly, where the householder has a registered disability the rate is 50 per cent using the basic income definition, but only 26 per cent using the full income definition. Another notable result is amongst couple households with no dependent children and under 60. Whilst the fuel poverty levels are relatively low within this group, where there is a household member who is disabled or ill or registered disabled, fuel poverty levels are notably higher.

In most household types, where someone has an illness or disability, the removal of DLA from income only results in a marginal increase in fuel poverty of around 1 per cent or less, under both full and basic income definitions, with the exception of single adult households. Fuel poverty increases by 3.7 per cent under a full income definition, and by 6.3 per cent under a basic income measure for households containing one person under 60, and for single adults aged 60 or over, fuel poverty increases by 2.3 and 3.3 per cent respectively for full and basic income definitions. By comparison, the exclusion of DLA results in significant increases in fuel poverty across all household types where the HRP or partner is registered disabled. As before, the highest increases occur within the single adult households, with a rise of 8.3 per cent (full income) and 15.6 (basic income) for single adults under 60, and a rise in fuel poverty of 4.1 per cent (full income) and 5.8 per cent (basic income) for single adults aged 60 or over. In the remaining household types, fuel poverty increases by around two to six per cent. Had Attendance Allowance (a disability benefit paid to those aged 65 and over) been excluded from the calculation of income, it is likely that fuel poverty rates would change amongst age groups of retirement age.

Figure 20: Household composition, levels of fuel poverty and both disability variables



Tenure type

Figures 21 and 22 demonstrate the levels of fuel poverty amongst different tenure types and according to the two measures of disability. In the case of both indicators of disability the fuel poverty rates in the private rented sector are the highest (35-36 per cent depending on the indicator used, using the basic income definition). Equally, within owner occupiers rates of fuel poverty are higher amongst households containing a member who is disabled or ill or registered disabled compared to households with no disabled or ill members. This trend cannot be observed in the social rented sector or within local authority housing where the differences are less apparent.

Figure 21: Tenure, fuel poverty and the presence of a household member with a long term illness or disability

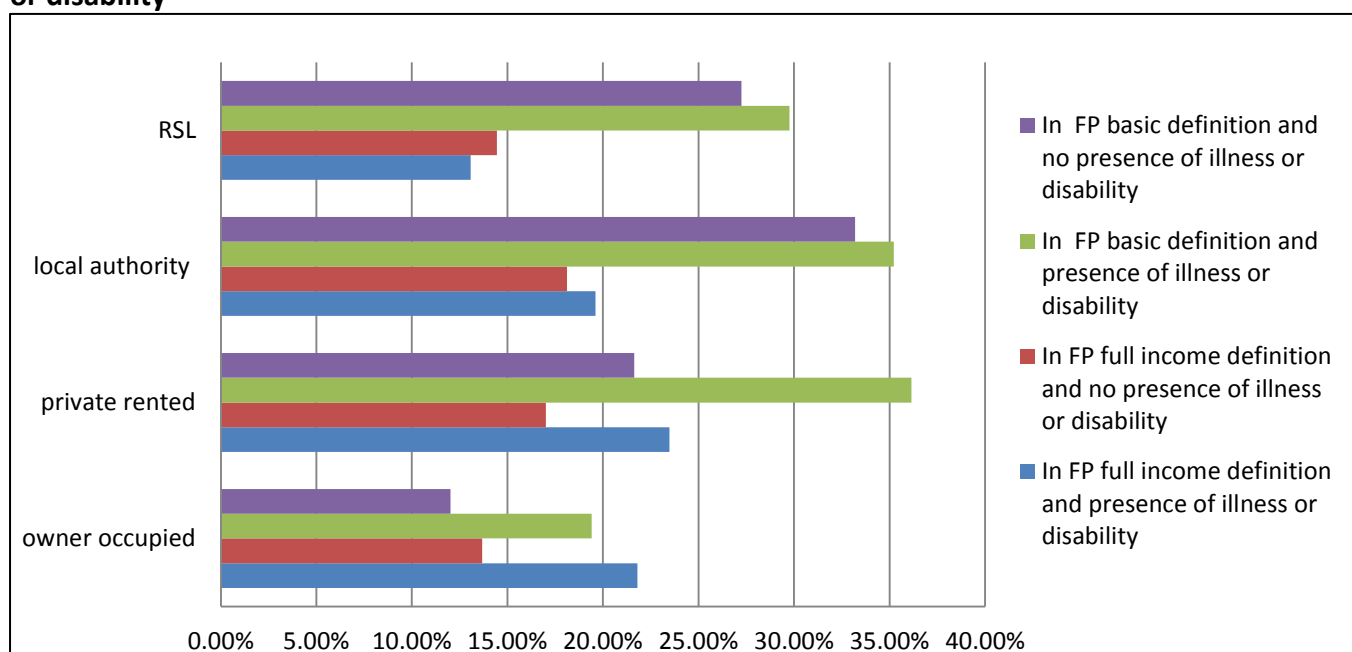
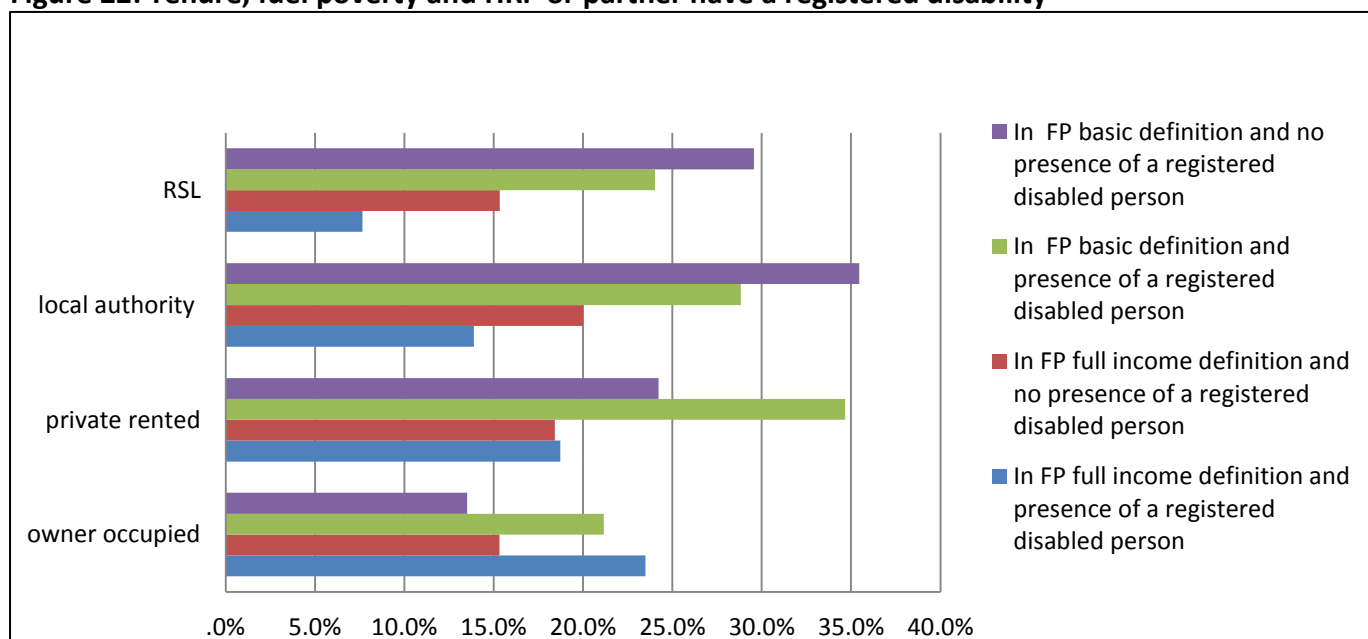


Figure 22: Tenure, fuel poverty and HRP or partner have a registered disability



In households where someone has a long term illness or disability, the exclusion of DLA from income calculations marginally increases fuel poverty levels across all tenure types, but only by around 1 to 4 per cent, with the largest increases occurring in local authority and social rented housing, with a 1.9 per cent rise under a full income definition, and a 4.2 per cent rise under a basic income measure for local authority tenants, and 3.6 per cent for social housing tenants. As observed previously in the report, the effect of DLA removal is more noticeable in households where the HRP or partner is registered disabled, with increases in fuel poverty of around 3 to 11 per cent. Under a full income definition, the largest increases occur within private rented housing (6.9 per cent) and social housing (4.3 per cent), whilst under a basic income definition, the largest increases occur within private rented housing (10.8 per cent) and local authority housing (9.3 per cent).

Payment type

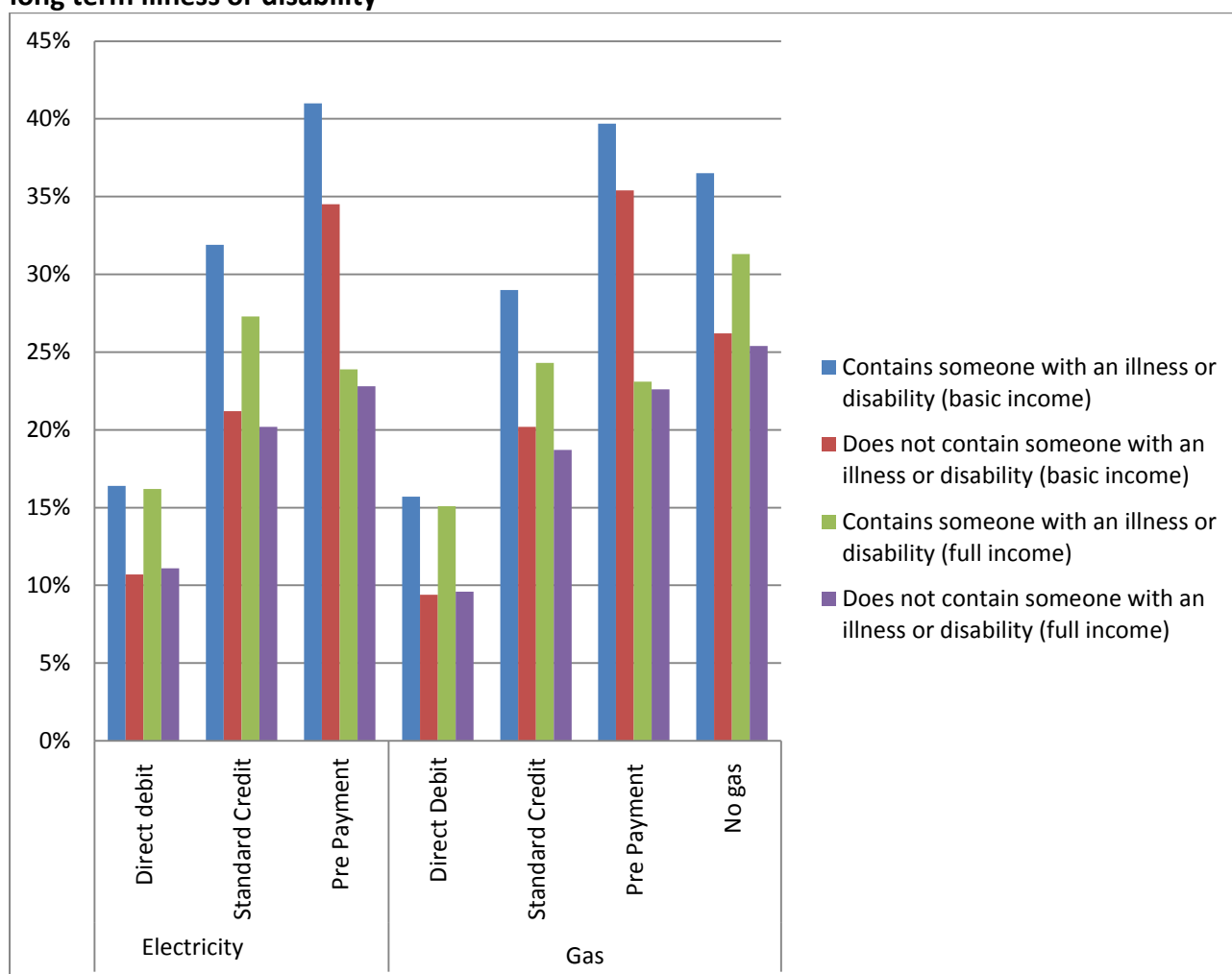
Table 3 and Figures 23 and 24 explore the relationship between the two indicators of disability, payment type, and levels of fuel poverty. Table 3 demonstrates the proportions of each household type paying by a particular method. For electricity payments a much higher proportion of households containing disabled people use prepayment meters. This trend is also notable amongst gas customers, but is less pronounced.

Table 3: Energy payment type by the two indicators of disability

	Disability measure	Direct debit (%)	Standard Credit (%)	Pre Payment (%)	Not on gas (%) ⁶
Electricity	Household contains someone who is sick or disabled	56.2	24.6	19.2	N/A
	Household does not contain someone who is sick or disabled	65.1	22.9	12.1	
	HRP or partner is registered disabled	52.9	26	21.1	
	Household does not contain HRP or partner who is registered disabled	63.4	23.2	13.5	
Gas	Household contains someone who is sick or disabled	50.4	21.4	14.7	13.5
	Household does not contain someone who is sick or disabled	58.7	19.7	9	12.6
	HRP or partner is registered disabled	48.5	22	15.9	13.7
	Household does not contain HRP or partner who is registered disabled	57	20.1	10.2	12.7

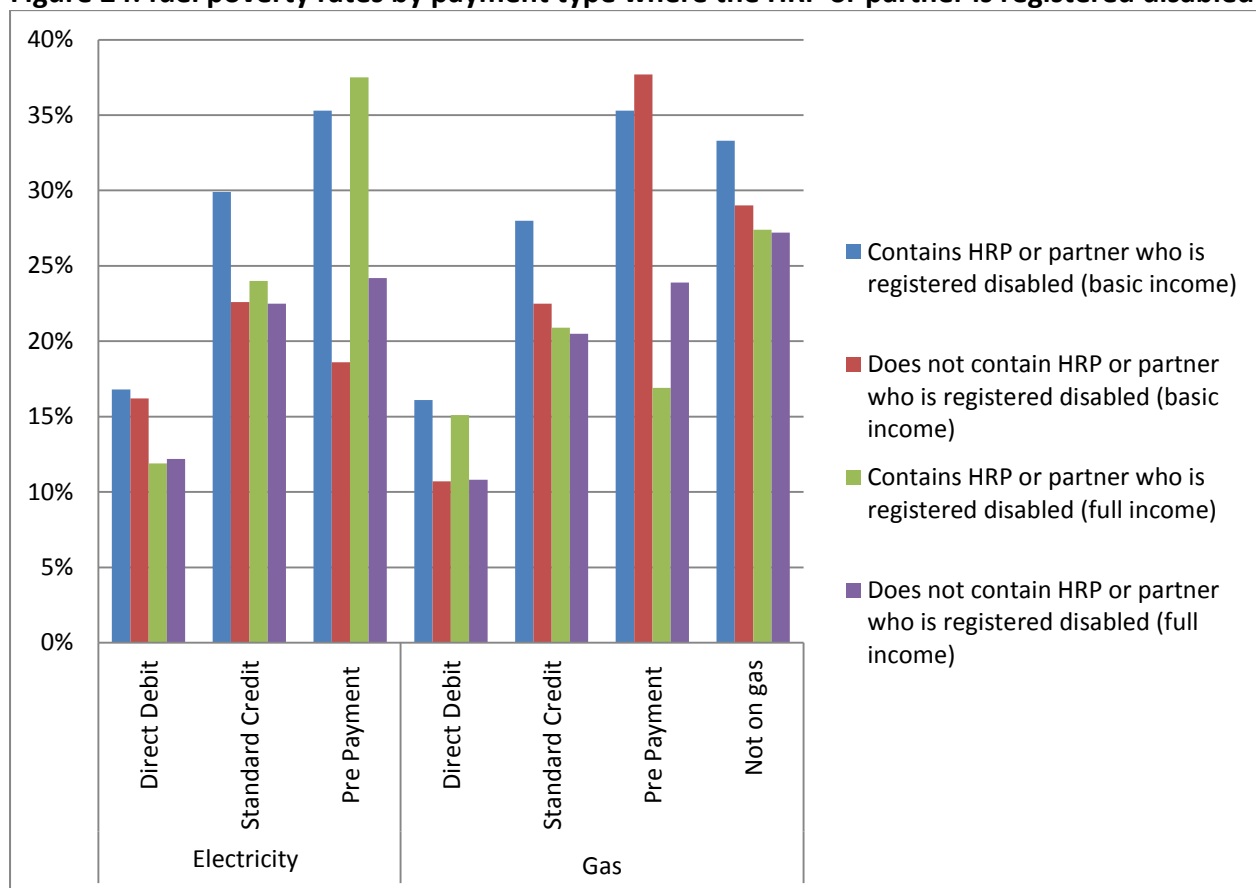
⁶ Not all households are connected to the gas network, often because they are in a rural location or in flats. The fuel poverty figures for those not on the gas network can still be calculated, as they rely on other forms of energy (largely electricity).

Figure 23: fuel poverty rates by payment type and the presence of a household member with a long term illness or disability



Considering Figures 23 and 24, fuel poverty rates do not change substantially when a basic income measure is applied to those paying by direct debit. One explanation for this is that lower income households may be less likely to pay by direct debit, so the figures presented here may represent households that are not in receipt of the types of benefits/payments excluded under the basic income definition. On the other hand, for those using prepayment meters⁷ the figures differ substantially between the two fuel poverty measures, and according to the presence of a household member with a disability (41 per cent of households containing a disabled person and using a prepayment meter to pay electricity charges are defined as being in fuel poor under the basic income measure, compared to 34.5 per cent of households in fuel poverty not containing a disabled member). The gas figures are very similar, although there are notably high levels of fuel poverty amongst all groups, under both definitions where a household does not have a gas supply.

⁷ Prepayment meters (especially in the case of electricity) have been associated with debt management and an alternative to disconnection (see DECC 2011)

Figure 24: fuel poverty rates by payment type where the HRP or partner is registered disabled

When DLA is removed from the calculations it increases fuel poverty rates amongst disabled people by around 2-4 per cent. The electricity prepayment fuel poverty rate (amongst households containing a disabled person) increases to 45.9 per cent under the basic definition and to 26.1 per cent under the full income definition. The figures for the 'HRP or partner is registered disabled' measure are more varied, with the highest fuel poverty rates (amongst prepayment users, under the basic definition) being amongst households where the HRP or partner is not registered disabled.

Case studies: the impact of DLA on definitions of fuel poverty

Seven case studies have been developed in order to demonstrate the impact of the current fuel poverty definition on levels of fuel poverty amongst disabled people. The case studies have been taken from the EHS, and all information is based on household data, although each household has been given a pseudonym in order to preserve anonymity. These particular households have been chosen for the following reasons:

1. They are all in receipt of DLA, which means that the effects of its removal from the fuel poverty calculation can be observed (not just in terms of the 10 per cent threshold, but also in terms of the extent of fuel poverty).
2. They have certain socio-economic, demographic or other features that have been identified within this report as having higher levels of fuel poverty. These features include:
 - a. Region (East and West Midlands, North West, North East and Yorkshire and the Humber, South West)
 - b. Disability type (particularly mobility related and heart disease)
 - c. Tenure type (the households are located in the private rented sector)
 - d. They are from a range of household composition types as these are likely to fare very differently under welfare and fuel poverty policy changes
3. Additional information such as payment method, whether the household was treated as a CERT priority group has also been included

These case studies clearly provide no generalisable data. However, the intention is that they highlight some of the difficulties associated with the measurement of fuel poverty amongst disabled people.

Household	Description
Jean – a single adult aged 60 or over	<p>Jean is a 68-year old single adult living in a one bedroom flat. She occupies her home during the day and so requires a full heating regime. She pays for her gas and electricity by prepayment meter. Jean has a long-standing disability, and receives a combined care and mobility DLA payment of £135 per week.</p> <p>Jean is eligible for the CERT priority and super priority groups, but is not classified as being fuel poor under the official fuel poverty definitions, with a fuel expenditure of 7.27% under a full income model, and 9.81% under a basic income model. However, once DLA payments are removed from the calculations, Jean becomes classified as fuel poor under both the full income and basic income models, with fuel expenditure of 11.70% and 20% respectively.</p>
Mary - a single adult aged 60 or over	<p>Mary, 64, is a single adult living in a detached property. Mary pays for the electricity in her home by standard credit. She is registered disabled and receives a combined care and mobility DLA payment of £98.20 per week. Mary is also eligible for the CERT priority and super priority groups. As Mary is under-occupying her home, fuel poverty is calculated using a partial full heating regime. With DLA included as income, Mary is not classified as being fuel poor under a full income model as her fuel expenditure is 8.83%, however, she is classified as fuel poor under a basic income model, with fuel expenditure representing 14.11% of income. When DLA is excluded from income, Mary is in fuel poverty under both income models, with fuel expenditure representing 12.68% of full income, and 27.30% of basic income.</p>
Kath and John - a couple aged 60 or over	<p>Kath and John are a married couple living in a semi-detached house. Kath, 60, is registered disabled and suffers from heart disease, whilst John, 63, has a long-standing illness. They receive a weekly mobility DLA payment of £49.75. Kath and John pay for their gas and electricity by prepayment meter, and require a full heating regime as they occupy their home during the day. Kath and John qualify for the CERT priority and super priority groups. Using the current definition of fuel poverty, with DLA included, Kath and John are close to the full income fuel poverty threshold, with fuel expenditure of 9.40%, and under a basic income, they are in fuel poverty, with fuel expenditure representing 14.71% of income. The removal of DLA as income causes Kath and John to be classified as fuel poor under both income models, with fuel expenditure now representing 11.74% of full income and 21.37% of basic income.</p>
Sybil and David – a couple aged 60 or over	<p>Sybil, 71, and David, 75, are a married couple living in a terraced house. They pay for their gas and electricity by prepayment meter, and require a full heating regime as they occupy their home during the day. Sybil and David are eligible for the CERT priority and super priority groups. Sybil and David are both registered disabled, and have mobility and respiratory impairments. They receive the mobility component of DLA, at a rate of £121.25 per week. With DLA counted towards household income, Sybil and David are not classified as fuel poor, with fuel expenditure representing 6.67% of income (both basic and full). However, when DLA is excluded from household income, Sybil and David's fuel expenditure increases to 12.62% of income, and they are now in fuel poverty.</p>

Roger and Penny - a couple with dependent children	Roger and Penny live in a semi-detached property with three children. Roger is 38, and does not suffer from any long standing illness or disability, whilst Penny, also 38, is registered disabled and has vision, mobility and breathing difficulties, as well as heart disease. Roger and Penny have two daughters, aged 17 and 9, both of whom have learning difficulties, as well as a 12 year old son, who also has learning difficulties. Roger and Penny pay for their electricity by direct debit, and require a full heating regime. Roger and Penny qualify for the CERT priority and super priority groups. When the combined care and mobility DLA payments of £100 a week are included as household income, Roger and Penny are in fuel poverty under a basic income model, with fuel expenditure of 12.72%, and are close to the full income model threshold, with fuel expenditure of 9.94%. When DLA payments are excluded from income, Roger and Penny are in fuel poverty under both income models, needing to spend 15.28% of basic income and 11.44% of full income.
Ruth and Michael - a couple with dependent children	Ruth and Michael live in a detached property with their two children. Michael, 49, and their 17 year old son and 22 year old daughter do not suffer from any long standing illness or disability, whilst Ruth, 45, has long standing hearing and mobility disabilities. Ruth qualifies for the mobility and care components of DLA, at a rate of £93.50 a week. Ruth and Michael qualify for the CERT priority group, but not the super priority group. Ruth and Michael require a full heating regime as the home is occupied during the day, and they pay for their electricity by direct debit. The family are not classified as under-occupying their home. With DLA included as income, Ruth and Michael are in fuel poverty under a full income model, needing to spend 10.26% of their income on fuel, and under a basic income model they are close to the fuel poverty threshold, with fuel expenditure of 9.83%. The removal of DLA as income moves Ruth and Michael into fuel poverty under both income models as they would need to spend 12.22% of full household income and 11.61% of basic income.
Jim - a lone parent	Jim is 39, and lives in a privately rented terraced house with his 15-year old registered disabled son. His son qualifies for the highest care component rate of the Disability Living Allowance, receiving £90 per week. Jim pays for his gas and electricity by prepayment meter, and qualifies for the CERT priority and super priority groups. Jim and his son are classified as under-occupying their property and so heating demand is modelled using a partial standard heating regime. Under the official full income definition of fuel poverty, with DLA included as income, Jim's household is not counted as being fuel poor, with fuel expenditure representing 6.94% of total household income. When DLA is removed from household income, Jim's household is still not classified as fuel poor, but fuel expenditure increases to 9.14%. However, under a basic income definition, Jim does move into the fuel poor category with the removal of DLA as income, with fuel expenditure representing 11.85% of household income.

Further analysis

As highlighted in the introduction the analysis conducted here has raised a number of questions regarding whether the fuel poverty definition currently used is fit for purpose. This is by no means a new finding (see Hills 2011 or Baker 2011), but as with previous studies our analysis has been limited by the availability of the data. A number of future steps are recommended. Firstly, an assessment of the implications of using alternative definitions of fuel poverty such as the proposed Hills LIHC definition (Hills 2012), the Minimum Income Standard based fuel poverty proposed by Moore (2012), in addition to considering the implications of different equivalisation factors on disabled people. Secondly, more analysis should be conducted to assess the implications of removing additional disability benefits/payments from the calculation of fuel poverty. Thirdly, further analysis should be conducted at the individual level of the EHS to explore fuel poverty levels in households where people have more than one disability and/or there are multiple people within a household with disabilities.

References

- Baker, W., Starling, W. Gordon, D. (2003) 'Predicting fuel poverty at the local level: final report on the development of the Fuel Poverty Indicator' *Centre for Sustainable Energy*
- Baker, W. (2011) '*Reaching the fuel poor: Making the Warm Home Discount work*' Consumer Focus
- Barnes, C. and Mercer, G. (2010) *Exploring Disability* Polity Press, Cambridge
- Beatty, C., and Fothergill, S. (2011) *Incapacity benefit reform: the local, regional and national impact* Centre for Regional Economic and Social Research, Sheffield Hallam University
- Bevan Foundation (2009) *Paying the Price of Being Poor* accessed online at <http://www.bevanfoundation.org/publications/paying-the-price-of-being-poor> on 23rd March 2013
- Campbell, J. and Oliver, M. (1996) *Disability Politics: Understanding our past, changing our future* Routledge, London
- Department for Communities and Local Government, *English Housing Survey, 2010-2011: Household Data* [computer file]. Colchester, Essex: UK Data Archive [distributor], July 2012. SN: 7040 , <http://dx.doi.org/10.5255/UKDA-SN-7040-1>
- Department for Communities and Local Government. (n.d.a) '*English Housing Survey: Household Dataset User Guide 2010/11*' HMSO: London
- Department for Communities and Local Government. (n.d.b) '*EHS 2010-2011 Interview Questionnaire*' HMSO: London
- Department for Energy and Climate Change (2012) *Annual Report on Fuel Poverty Statistics 2012* National Statistics
- Department for Energy and Climate Change (2011) *Annual Report on Fuel Poverty Statistics 2011: Annex to the Fuel Poverty Statistics 2011* accessed online at https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/48139/2184-fuel-poverty-monitoring-indicators-2011.pdf on 10th April 2013
- Department of Energy and Climate Change (2010) '*Fuel Poverty Methodology Handbook*' HMSO: London
- Department for Work and Pensions (2013) *Disability Living Allowance* accessed online at <http://www.dwp.gov.uk/healthcare-professional/benefits-and-services/disability-living-allowance/> on 10th April 2013
- Department for Work and Pensions (2010) *Households Below Average Income: An Analysis of the Income Distribution* DWP, London
- Fahmy, E., Gordon, D., Patsios, D. (2011) 'Predicting fuel poverty at a small-area level in England' *Energy Policy* 39: 4370-4377

Hills, J. (2012) *Getting the measure of fuel poverty: Final Report of the Fuel Poverty Review* CASE Report 72

Kaye, A., Jordan, H., and Baker, M. (2012) *The Tipping Point: The human and economic cost of cutting disabled people's support. A report from the Hardest Hit coalition bringing together over 90 disabled people's organisations and charities that are members of the UK Disabled People's Council and the Disability Benefits Consortium* UK Disabled People's Council and the Disability Benefits Consortium

Monteith, M., et al. (2009) *'Taking a closer look: Child Poverty and Disability'* Save the Children and Family Fund, Northern Ireland

Moore, R. (2012) 'Definitions of fuel poverty: Implications for policy' *Energy Policy* 49: 19-26

Palmer, M. (2011) 'Disability and Poverty: A conceptual Review' *Journal of Disability Policy Studies* 21: 210

Parckar, G. (2008) 'Disability poverty in the UK' Leonard Cheshire Disability

Scope (2012) *DLA Reform* accessed online at www.scope.org.uk/news/dla-reform on 31st October 2012

Walker, G., and Day, R. (2012) 'Fuel poverty as injustice: Integrating distribution, recognition and procedure in the struggle for affordable warmth' *Energy Policy* 49: 69-75