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JSNA Protected Characteristics and Equality Profile

No 12: Gastrointestinal Diseases

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Contents

Foreword

Joint Strategic Needs Assessments (JSNAs) are the process through which local areas identify the current and future health and wellbeing needs of their local population. These needs can relate to medical issues such as heart disease or dementia, through to wider influences on an individual's health and wellbeing, such as housing and employment. A key element to the JSNA process is to understand how different population groups may be more adversely affected than others i.e. to understand our inequalities in health.

To support this agenda, a number of the JSNA leads from across Cheshire & Merseyside and the North West have collaborated to develop this series of Protected Characteristics Profiles. The documents provide an overview of how various health and wellbeing issues affect each of the population groups listed within the Equality Act 2010. We recognise that evidence and research in this field is constantly evolving, and so these profiles are designed to provide a starting point for local commissioners and policy makers, who may be able to supplement them with more detailed local knowledge. The documents are not systematic review, rather a summary of key sources of information that will support local decision making. Over time the aim is to build on these profiles, providing further detail when it becomes available and covering a more extensive range of topics. With that in mind we would welcome and encourage feedback on these reports.

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Gastrointestinal (GI) diseases cover a wide range of conditions including acute episodes, chronic conditions and cancers of the GI tract. Given the heterogeneous nature of the diseases, it is not possible to provide a protected characteristics and other vulnerable groups profile for each condition separately. Some are better researched than others. This profiles provides information where research has looked at a particular demographic section, usually for a specific condition, for example, gender differences in Irritable Bowel Syndrome (IBS), and more generically, for example the impact of aging on GI conditions.

1. Age

The epidemiological data presented in the main JSNA on gastrointestinal (GI) diseases shows that acute GI conditions affect the very young and very old disproportionately. GI conditions are one of the main causes of hospitalisation in those under the age of 1 year.

The GI tract seems to have reserves and ability to maintain itself not seen in other physiological systems such as cardiovascular, metabolic, renal, endocrine, musculoskeletal, immunologic, and neurologic systems. However, a range of factors, both directly concerning the GI system and also other influences on it such as worsening of other systems and polypharmacy, put the older population, those aged 65 and over, and especially those 75 and over from developing or worsening GI diseases. Aging is also associated with the accumulation of genetic mutations and chromosomal instability, reflected in the higher incidence and mortality of GI cancers in the old.[1]

2. Gender

According to the World Health Organization, "**Sex** refers to the biological and physiological characteristics that define men and women. **Gender** refers to the socially constructed roles, behaviours, activities, and attributes that a given society considers appropriate for men and women.[2]

The understanding of the impact of sex and gender on GI diseases is underdeveloped.[3] Things have improved since the first person who addressed gender differences in heart diseases and treatment, Karen Berkley in 1992. She observed that gender was not reported in 45% of the published studies.

Gender-related differences in GI and associated physical symptoms are apparent in persons with IBS, more strongly in postmenopausal women.[4] In addition to biological effects of sex such as hormonal factors (Women often experience worse symptoms at different times in the menstrual cycle[5]) and genetic differences, other gender-linked factors including psychosocial behaviours related to stress, mental well-being, gender roles, and the experience of sexual abuse have an important role in the pathogenesis of IBS.[6] Prejudice for gender role in different cultures and societies, for example, abdominal bloating, impact differently on symptomatology of men and women in the modern society, which sees slender women as more beautiful. Unlike

men with bloating, women with bloating may usually be concerned about the effect of distention on their appearance leading psychological distress as well as their physical symptom.[7]

On average, the female colon is about 10cm longer than the male colon, with more twists and turns – and it also has to compete for space in the pelvis with the reproductive organs. This puts women at a greater risk of many GI symptoms. In 2014, researchers at the University of Texas at Austin found that when men and women eat identical diets, they see different responses in their gut microbiota. Although men, on average, have less sensitive guts than women, there are some issues that affect men more frequently. Evidence suggests that women with IBS are twice as likely to exhibit the constipation-predominant subtype and are approximately half as likely to have the diarrhoea-predominant subtype." While men are no more prone to heartburn than women, they are more likely to have a weak valve where the oesophagus meets the stomach, increasing their risk of oesophageal damage.[8]

3. Disability

People with learning disabilities often suffer disproportionate levels if ill health and worse health outcomes compared to the general population. They also face a number of challenges in using health services. Local data collection across Cheshire & Merseyside showed that between 34%-54% had a Body Mass Index (BMI) of over 30. This classifies them as obese and the percentages are higher than for the general population. Dysphagia (difficulty swallowing) was also a commonly cited health problem. In some areas bowel cancer screening uptake was lower than the general population but in others it was similar. [9]

More recent data on health and care of people with learning disabilities shows that although there has been an increase in the percentage receiving bowel cancer screening (from 6**8.6% in** 2014-15 to **77.8**% in 2017-18), the rate was still significantly lower for those patients with learning disabilities (**77.8%**) than those without (**83.7%**).[10]

This dataset shows slightly more Halton patients with learning disability have constipation, dysphagia and gastro-oesophageal reflux disorder (GORD) compared to England but a higher percentage have received bowel screening. A greater proportion of Halton patients with learning disability are obese, 41.8%, compared to Halton patients without a learning disability, 38.4%.

4. Pregnancy & Maternity

There are no gastrointestinal diseases specifically caused by pregnancy. However, pregnancy may complicate most gastrointestinal diseases, particularly gastroesophageal reflux and inflammatory bowel disease. In addition, gastrointestinal symptoms are extremely common in the pregnant patient. They represent some of the most frequent complaints during pregnancy, possibly due in part to elevated levels of progesterone (eg, nausea/vomiting, gastroesophagel reflux disease [GERD]) and/or prostaglandins (diarrhea).[11] Some women have GI disorders that are unique to pregnancy. Other pregnant patients present with chronic GI disorders that require special consideration during their pregnancy. Most of these symptoms are a manifestation of normal altered physiology in which changes occur both functionally and anatomically. These changes may cause new symptoms, worsen preexisting disease, or mask potentially serious disease.[12]

- Nausea, with or without vomiting, is common in early pregnancy, usually self-limiting,[13][14] and occurs in 50%-90% of pregnancies, whereas vomiting is an associated complaint in 25%-55% of pregnancies
- Hyperemesis gravidarum[a] occurs in 3 to 10 cases per 1000 pregnancies[15][16]
- Gastroesophageal reflux disease (GERD), generally known as heartburn, is common in pregnancy and can have a negative impact on their health-related quality of life, particularly late in pregnancy.[17] It is experienced by 45%-80% of pregnant women.[18][19] About 52% of pregnant women's initial experience of GERD is in their first trimester; 24%-40% experience it in their second trimester and 9% in their third trimester
- Pregnancy is associated with an increased risk of gallstone formation, which in turn is an important cause of pancreatitis in pregnancy. Cholecystectomy is the second most common nonobstetric surgical procedure in pregnancy, exceeded only by appendectomy[20]
- Peptic ulcer disease (PUD) is uncommon during pregnancy,[21] with a reported incidence rate of 0.005%, although this is probably underestimated. PUD is believed to improve during pregnancy as a result of decreased gastric acid secretion.[22]
- Diarrhea occurs in up to 34% of pregnant women, and its causes in pregnancy mirror those of the nonpregnant state, with the most common being infectious agents (eg, *Salmonella, Shigella,* and *Campylobacter* species; *Escherichia coli;* protozoans; viruses). Food poisoning, medications, and irritable bowel syndrome are other common causes. Exacerbations of inflammatory bowel disease can also occur in pregnancy.[23]

[a] Hyperemesis gravidarum is the most severe form of nausea and vomiting in pregnancy, characterized by persistent nausea and vomiting associated with ketosis and weight loss (>5% of prepregnancy weight). This condition may cause volume depletion, electrolytes and acid-base imbalances, nutritional deficiencies, and even death. Severe hyperemesis requiring hospital admission occurs in 0.3-2% of pregnancies

5. Race

A study of ethnic variations in hospitalisation/death for lower gastrointestinal disorders in Scotland found that appendicitis and diverticular disease were comparatively low in most non-White groups, while ulcerative colitis and Crohn's disease were mostly higher in South Asians.[24]

Disparities among subgroups related to these cancers' incidence and mortality exist. The epidemiology and risk factors associated with each cancer bear out differences for racial groups in the United States. Explanations for the disparity are not as obvious and are likely multifactorial, including socio-economic and health care access, treatment and prevention (vaccination and screening) differences, dietary and composition of the gut microbiome, as well as biological and genetic influences.[25]

Racial disparities are seen in Crohn's Disease (CD) with research suggesting African Americans (AA) have worse outcomes than Caucasian Americans (CA). A study to identify if social disadvantage rather than race explained this found that whilst those below the state defined poverty line had worse outcomes, those in poverty from AA ethnicity had worse outcomes than their CA counterparts[26]

Another study that considered multiple influences, this time on colorectal cancer outcomes, examined the influence of living in large and smaller metropolitan areas, rurality as well as race and socio-economic status. It found that patients from large metropolitan counties were more often African-American, and those in rural counties were more likely to be white and have low socioeconomic status (SES). Patients from large metropolitan (>1 million) and rural counties were more likely to have metastatic disease and decreased survival compared to smaller metropolitan counties (<1 million). Late stage of presentation and diminished survival were also associated with African-American race, male sex and lower SES.[27]

6. Religion & Belief

None found

7. Sexual Orientation

The key lifestyle behaviours associated with GI conditions - tobacco, diet and alcohol use – have differential patterns amongst Lesbian, Gay, Bisexual and Transgender (LGBT) populations.

A study of young people between the ages of 14 and 15 found that sexual minorities (7.6% of the sample) reported more risk behaviors than heterosexuals for all 12 behaviors (mean = 5.3 vs 3.8; $P < .001$) and for each risk behavior: odds ratios (ORs) ranged from 1.3 to 4.0, except for a diet low in fruit and vegetables (OR = 0.7)[28] Adolescent alcohol use is a significant public health concern that contributes to preventable morbidity and mortality. Findings suggest that disparities in alcohol use among youth with a minority sexual orientation emerge in early adolescence and persist into young adulthood.[29]

Two UK Stonewall surveys confirmed that males and females in the LGBT population had higher levels of alcohol use compared to the general population, and that the difference was more pronounced for LGBT females. More than 2 in 5 (42%) of gay and bisexual men said they drink alcohol on three or more days a week compared to 35% of men in general.[30] Levels amongst LGBT women were slightly lower than for LGBT men, but much higher than the general population, with 40% of lesbian and bisexual women drinking three times a week or more, compared to a quarter of women in general.[31]

The Public Health England briefing on health inequalities noted that Lesbian, Gay, Bisexual and Transgender people over the age of 16 are more likely to be current smokers, less likely to have never smoked, and less likely to have given up smoking than the general population. Survey by The Lesbian and Gay Foundation and by Stonewall revealed that 67% of gay and bisexual men have smoked at some time in their life compared to half (50%) of heterosexual men. 26% of gay and bisexual men currently smoke compared to 22% of men in the general population. Smoking rates are higher for men who have sex with men compared to their heterosexual counterparts. Nationally two thirds of lesbian and bisexual women have smoked compared to half of heterosexual women. Just over a quarter currently smoke.[32]

Lesbians and bisexual females are more likely to be overweight or obese.[33] The Active People Survey suggests that lesbian and bisexual women have similar intake of fruit and vegetables as heterosexual women and there is no specific evidence to suggest otherwise.[34]

Historically *Shigella* infections in adults in the UK were mainly due to overseas travel. However, in recent years there has been a large increase in diagnoses of *Shigella* among men whose infection was not associated with travel, while diagnoses in women remain stable.

In England, there were nearly five times as many adult male cases of *Shigella* without a known travel history than female cases in 2015. This represents an excess of 500 male cases compared to females, which is more than three times more than reported in 2011. Affected areas include London, Brighton and Manchester.[35][36]

Men who have sex with men (MSM) are at increased risk of Shigella, a common diarrhoeal disease:[37]

- MSM are more likely to acquire shigellosis than the general adult population
- Many shigellosis outbreaks among MSM have been reported in the United States, Canada, Tokyo, and Europe since 1999
- MSM are more likely than others to get infected with *Shigella* that is resistant to two antibiotics commonly used to treat adults who have shigellosis. Therefore, MSM who get shigellosis may need to see their healthcare providers repeatedly before receiving treatments that will work. Additionally, they may require injectable antibiotics rather than antibiotics that can be taken by mouth
- HIV-infected persons can have more severe and prolonged shigellosis, including having the infection spread into the blood, which can be life-threatening

Whilst the experience of both acute and chronic disease are the same for LGBT people as heterosexual people from a physical standpoint, a study of those with inflammatory bowel disease showed that gay and bisexual men require precise information about sexual activity/restrictions, and staff should address the psychological needs of patients by enabling coming out and partner involvement. [38]

8. Marriage & Civil Partnership

None found

9. Gender Reassignment

None found

10.Deprivation

Deprivation in incidence of and outcomes for GI diseases is one of the most well researched aspects of differential population experience of this topic. Research has consistently found distinct and in many cases marked relationships between the incidence of GI conditions, and socioeconomic deprivation. This is the case for both acute, chronic GI conditions, GI symptoms and cancers of the GI system. Those living in areas of deprivation have higher incidence of acute pancreatitis, largely explained by a higher incidence of alcoholic aetiology, which also affects mortality.[39][40] A study of data from the London Cancer Network showed there has been a less marked fall in gastric cancers amongst less affluent men (7% compared to 32% fall in more affluent men).[41] However, this relationship was less marked for women nor did it appear to influence access to treatment of survival. Conversely, there was an increase in

oesophageal cancers of 51% in men from more affluent areas compared to 2% rise in less affluent men. An Australian study of looking at the prevalence of 16 GI symptoms such as constipation, heartburn, nausea and others found a clear trend for symptom rates to increase by deprivation quintile. Only oesophageal symptoms and diarrhoea did not show this association.[42] Whilst deprivation significantly predicted incidence of 17 infectious diseases, a North Est of England study found this was the case for only one infectious intestinal disease (E.coli O157 infection) after accounting for recent foreign travel.[43]] Rotovirus causes severe gastroenteritis in infants and young children. The UK introduced vaccination in July 2013. A study looking at data from Merseyside found that whilst vaccine uptake was lower amongst children from the most socioeconomically deprived areas, the rate of hospitalisations averted per 1,000 first doses of vaccine was greatest amongst infants in the most deprived communities. So, not only has the introduction of the vaccination reduced incidence of gastrointestinal disease across the healthcare system, the vaccine impact was greatest amongst the most deprived communities, despite lower vaccine uptake.[44] Hospitalisation rates are also affected by deprivation for upper GI bleeding,[45] inflammatory bowel disease (despite inconclusive relationship between incidence rates and deprivation)[46]

11.Other Vulnerable Groups

None found

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