



Kent Academic Repository

Hussein, Shereen (2009) *Social care workforce profile: age, gender and ethnicity*. *Social Care Workforce Periodical* (2). ISSN 2047-9638.

Downloaded from

<https://kar.kent.ac.uk/68403/> The University of Kent's Academic Repository KAR

The version of record is available from

This document version

Publisher pdf

DOI for this version

Licence for this version

UNSPECIFIED

Additional information

Unmapped bibliographic data:M3 - Article [Field not mapped to EPrints]JO - Social Care Workforce Periodical [Field not mapped to EPrints]

Versions of research works

Versions of Record

If this version is the version of record, it is the same as the published version available on the publisher's web site. Cite as the published version.

Author Accepted Manuscripts

If this document is identified as the Author Accepted Manuscript it is the version after peer review but before type setting, copy editing or publisher branding. Cite as Surname, Initial. (Year) 'Title of article'. To be published in *Title of Journal*, Volume and issue numbers [peer-reviewed accepted version]. Available at: DOI or URL (Accessed: date).

Enquiries

If you have questions about this document contact ResearchSupport@kent.ac.uk. Please include the URL of the record in KAR. If you believe that your, or a third party's rights have been compromised through this document please see our [Take Down policy](https://www.kent.ac.uk/guides/kar-the-kent-academic-repository#policies) (available from <https://www.kent.ac.uk/guides/kar-the-kent-academic-repository#policies>).

Social Care Workforce Periodical

SOCIAL CARE WORKFORCE PROFILE: AGE, GENDER AND ETHNICITY

Shereen Hussein, BSc MSc PhD
September 2009

ISSUE 2

SOCIAL CARE WORKFORCE RESEARCH UNIT
KING'S COLLEGE LONDON

Correspondence: Dr Shereen Hussein
shereen.hussein@kcl.ac.uk

Preface

The *Social Care Workforce Periodical* aims to provide timely and up-to-date information on the social care workforce in England. In each issue, one aspect of the workforce is investigated through the analysis of emerging quantitative workforce data to provide evidence-based information that relates specifically to the social care workforce in England. The purpose is to share emerging findings with the social care sector to help improve workforce intelligence. Such updates are useful in highlighting specific issues for further analysis and to inform workforce policy. The first few issues of *Social Care Workforce Periodical* will provide in-depth analyses of the latest versions of the National Minimum Data Set in Social Care (NMDS-SC); however, other sources of data may be used in further issues. We would welcome any suggestions on topics for inclusion in future issues.

Acknowledgments

The author is most grateful to Skills for Care for providing the latest NMDS-SC data files. Particular thanks are due to David Griffiths, Christine Eborall and Sarah Woodrow for their support and assistance, and to colleagues at the Social Care Workforce Research Unit. This work is funded under the Department of Health Policy Research Programme support for the Social Care Workforce Research Unit at King's College London. The views expressed in this report are those of the author alone and should not necessarily be interpreted as those of the Department of Health or Skills for Care.

Introduction

In March 2006, the Employment Equality (Age) Regulations were published. Since October 2006 it has been unlawful for any employer in the United Kingdom (UK) to discriminate against or harass anyone on grounds of age, directly or indirectly, in relation to either employment or vocational training. This covers arrangements for recruitment and promotion, pay and conditions, education and training, and retirement and redundancy.

The impact of regulation in relation to an aged workforce such as the social care workforce is still to be seen. Current legislation prohibits age discrimination both in employment and vocational training: this may pose some challenges for the social care sector. Moreover, the projected increase in the need for social care over the next decade makes workforce strategies and policies for extending working life and improving recruitment and retention particularly important.

In this issue we provide detailed analysis of the social care workforce in relation to social care workers' age, gender and ethnicity, to enhance understanding of how workers' profiles vary according to sector of employment and different job roles. We aim to provide policy makers and employers with information which will enable them to employ specific strategies in recruiting and retaining workers to particular job roles within the social care sector. The findings are based on the analysis of NMDS-SC May 2009 workers files¹ that contain detailed anonymised information on 362,885 employees. However, it is worth remembering that current returns to NMDS-SC over-represent employees in the independent sector (private and voluntary; 82% vs. estimated 70%) and slightly under-represent those employed in local authorities (13.2% vs. estimated 16.6%; see Eborall and Griffiths, 2008 for full estimates).

As illustrated by other research (Manthorpe and Moriarty 2009) and issue 1 of the *Social Care Workforce Periodical* (Hussein, 2009), unlike the health sector, the NMDS-SC social care sector comprises a large private and independent sector component. As a result, over three quarters (76.4%) of establishments are either micro (less than 11 staff members) or small (employing 11-49 staff) employers, as indicated by NMDS-SC returns and estimates (Eborall and Griffiths, 2008). It is likely that such features will affect how employers deal with staff members in relation to their age.

McNair and Flynn (2006) found that social care employers are more likely to request age information at application time than those in the health sector or in the UK as a whole. A survey of employers revealed that social care employers are less willing than those in the health or other sectors to recruit employees above

¹ Employers who complete NMDS-SC returns are asked to complete two forms: the first relates to the establishment as a whole with aggregate information on the volume and structure of its workforce and the second requests detailed information on each one of the establishment employees. The second data set is used in the analysis. For further information on NMDS, please see Appendix.

state pension age. They are also more likely to set their recruitment ages below their normal retirement ages (McNair and Flynn, 2006).

Employees' profile and sector

Using NMDS-SC, May 09 release data, the median age of employees and other statistics were calculated. Age data contained some extreme cases where age was recorded as young as eight or old as 89. As a quality control process we only included employees where age is recorded as 16 years or older, but younger than 66 years, to calculate age statistics such as mean and median. Among employees reported to be within the working age group (16-65²) the median age in the whole social sector is 42 years. The median, rather than mean, age is used for comparison because the median is less sensitive to extreme scores, even if there are very few of them, than the mean. The median age reflects the middle of the age distribution.

Table 1 presents details of the number of employees employed within different types of establishment, their median and mean age and its standard deviation. These statistics are presented graphically in Figure 1. The youngest group of employees was found to be working in the private sector, with a median age of 40 (mean=39.2), this was followed by the voluntary sector at 42 years and local authorities (children's services) at 43 years. Employees working in local authorities (generic services) were on average considerably older, with a median age of 47 years (mean=44.6).

Figure 1 is a graphical representation of the age statistics (Table 1) using box plot method. The middle (or waist) of each box indicates the median age, the top of the box is the 3rd quartile while the bottom of the box is the 1st quartile of age distribution among each reported ethnicity group. The 'blue dash' represents mean age while the 'pink arrow' represents +/- of standard deviation of the distribution. The statistical significance of the variations in median age can be explored graphically using Tukey's notches method. The notches are drawn as a 'waist' on either side of the median and are intended to give a rough impression of the significance of the differences between two medians. Boxes in which the notches do not overlap are likely to have significantly different medians (Rousseeuw and Ruts, 1998).

² We used this age group for comparability with the internationally defined working age-group. The contribution of older employees to the sector will be analysed further in a separate issue of SCWP.

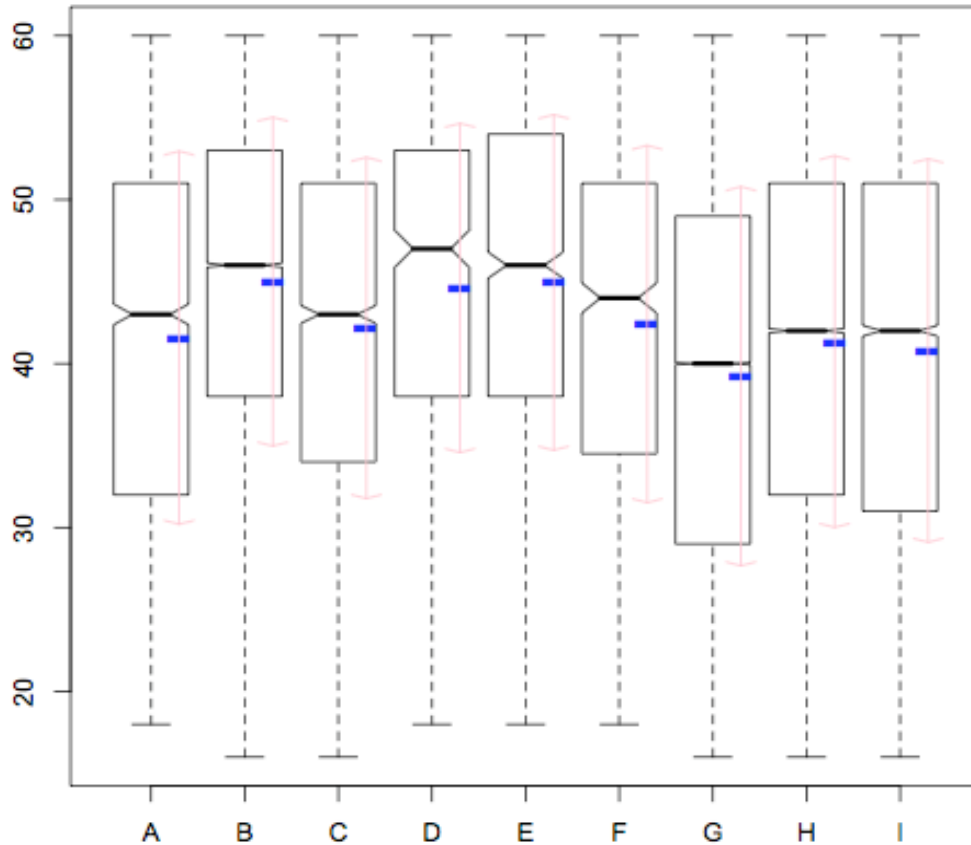
Table 1: Median, mean and standard deviation of age of social care employees by type of establishment, NMDS-SC May 2009

Key	Establishment type ³	Number of employees ^a	Median age	Mean age	Standard deviation
A	Not recorded	2271	43	41.6	11.4
B	Statutory local authority (adult services)	33578	46	45.0	10.0
C	Statutory local authority (children's services)	2449	43	42.2	10.4
D	Statutory local authority (generic or other services)	425	47	44.6	10.0
E	Statutory local authority owned	1016	46	44.9	10.2
F	Statutory health	808	44	42.4	10.9
G	Private sector	202059	40	39.2	11.6
H	Voluntary or third sector	48551	42	41.3	11.3
I	Other	9377	42	40.8	11.7
	All workers (16-65)	319407	42	41.7	12.3

The notches in Figure 1 show that some of these variations in age by sector are statistically significant. Staff working in local authorities (generic services) are significantly older than those working in local authorities (children's services) and the private and voluntary sectors, but not significantly older than those working in local authorities (adult services) or local authority owned services. It is also clear from the graph that workers in the private sector (G) are significantly younger than workers in any other type of establishment. Furthermore, the data show that workers who work on a full time basis are, on average, the oldest group with a median age of 44 years (mean=43.3), followed by those working part time with a median age of 43 (mean=41.8), while the youngest group is those working on a flexible basis (e.g. part time), with a median age of 40 years.

³ For full definitions of establishment types please see Appendix.

Figure 1: Median, mean and significant notches for employees age by type of employing establishments, NMDS-SC May 2009



It is well known that women constitute the large majority of the social care workforce. Employers who completed NMDS-SC returns indicated that among employees where *gender* is recorded, 84.3 percent are women, and 15.7 percent men. Employers did not provide information about the gender of about 11 percent of their total workforce. Table 2 shows that the percentage of women is highest among local authorities (adult services), at 86 percent, and lowest among the voluntary sector, at 81 percent; however, this may relate to the under-representation of returns from local authorities and further analysis at later dates may establish or refute this.

Table 2: Distribution of employees by gender and type of establishment, NMDS-SC May 2009

Establishment type	Men		Women		Total#
	N	%	N	%	
Local authority -adult services	6160	14.4	36482	85.6	42642
Local authority -children's services	450	16.9	2217	83.1	2667
Local authority -generic or other services	87	18.8	375	81.2	462
Local authority owned	149	11.8	1113	88.2	1262
Statutory health	195	17.5	918	82.5	1113
Private sector	30108	14.9	171823	85.1	201931
Voluntary or third sector	10886	19.3	45528	80.7	56414
Other	1781	17.1	8662	82.9	10443
Not recorded	376	12.8	2552	87.2	2928
All workers	50192	15.7	269670	84.3	319862

Excluding records where employers did not provide information on gender of employees

In relation to *ethnicity*, 26.6 percent of employees' records were missing information on ethnicity. Among the 266,374 records where information on ethnicity is available, the majority (82%) are recorded as 'white', with eight percent 'Black or Black British', five percent 'Asian or Asian British', two percent of mixed ethnicity and three percent of other ethnicities (see Table 3). Table 3 shows that the proportion of white employees was highest among local authorities in general, with the maximum 95 percent among local authorities (generic or other), while both the voluntary and private sectors have lower proportions of white employees, at 82 and 80 percent respectively, and the lowest proportion is observed among statutory health at 72 percent. However, with over a quarter of employees missing information on their ethnicities it is important to treat these variations with caution.

Although the proportion of employees identified by their employers as having 'Black and Black British' ethnicity is the next highest, this varies significantly by establishment type ($\chi^2= 4915$, $P<0.001$). The highest proportion of employees identified as 'Black' is among health establishments at 17 percent; this is followed by 10 percent of employees among the voluntary sector and nine percent among the private sector. Employers identified 5 percent of their workforce to be of Asian or Asian British ethnicities; this was again highest among health employers, at eight percent, and lowest among local authority (adult services), at two percent.

Table 3: Distribution of employees by ethnicity and establishment type, NMDS-SC May 2009

Establishment type	Ethnicity					Total # %
	White	Mixed	Asian or Asian British	Black or Black British	Other groups	
	%	%	%	%	%	
Local authority - adult services	35825 90.9%	653 1.7%	863 2.2%	1777 4.5%	272 0.7%	39390 100%
Local authority - children's services	2288 91.7%	51 2.0%	64 2.6%	82 3.3%	10 0.4%	2495 100%
Local authority (generic or other services)	303 94.7%	3 0.9%	12 3.8%	0 0.0%	2 0.6%	320 100%
Local authority owned	999 87.3%	13 1.1%	46 4.0%	77 6.7%	9 0.8%	1144 100%
Statutory health	674 71.2%	13 1.4%	72 7.6%	162 17.1%	25 2.6%	946 100%
Private sector	130956 80.4%	3184 2.0%	10515 6.5%	14490 8.9%	3804 2.3%	162949 100%
Voluntary or third sector	39297 81.8%	421 0.9%	1622 3.4%	4661 9.7%	2043 4.3%	48044 100%
Other	7430 86.1%	79 0.9%	261 3.0%	505 5.9%	351 4.1%	8626 100%
Total	219946 82.6%	4435 1.7%	13546 5.1%	21889 8.2%	6558 2.5%	266374 100%

Excluding records where employers did not provide information on ethnicity of employees

Characteristics' interactions

In terms of *age and ethnicity*, the youngest group of workers is Asian or Asian British, with a median age of 37 years, while 'white' workers have the highest median age, at 44 years. Table 4 presents the number of employees recorded as belonging to different ethnic groups, their median and mean ages as well as the standard deviation of the distributions.

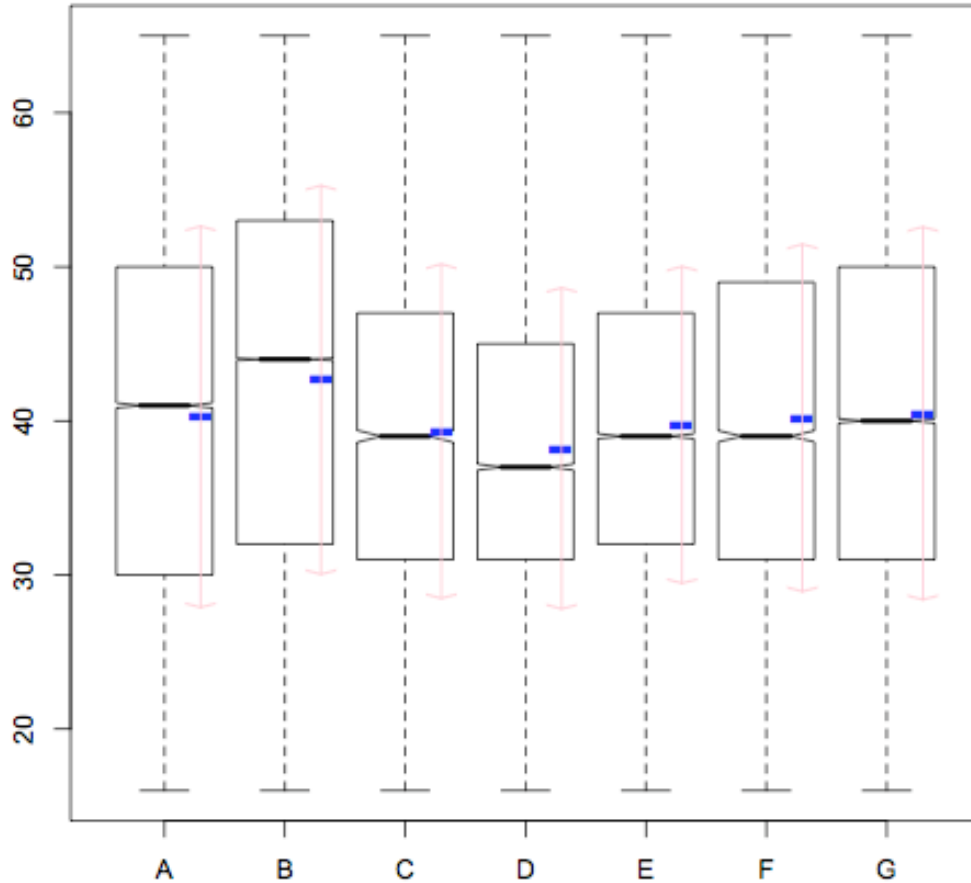
Table 4: Median and mean age by ethnicity of employees as recorded by employers, NMDS-SC May 2009

	Ethnicity	Number of employees	Median age	Mean age	Standard deviation
A	Not recorded	34606	41.0	40.3	12.4
B	White	198232	44.0	42.7	12.6
C	Mixed	4196	39.0	39.3	10.8
D	Asian or Asian British	12476	37.0	38.2	10.4
E	Black or Black British	19752	39.0	39.7	10.3
F	Other groups	6119	39.0	40.2	11.3
G	Not known	44026	40.0	40.5	12.1

Figure 2 presents a boxplot representation of age of employees by ethnicity as coded in Table 4. All variations in median age by ethnicity presented in Figure 2 are significant using Tukey's notches method (see page 6 for further explanation). Figure 2 also shows that not only do employees identified as Asian or Asian British have the lowest median age, they also have the smallest spread of ages: three quarters of Asian employees are older than 30 years but younger than 43 years. On the other hand, employees of 'white' ethnicity have the highest median age of 44 years and have a wider range of ages as the 1st and 3rd quartiles of their age distribution span from 32 to 53 years old. Figure 2 also shows that the median age of employees identified as mixed, Black or other groups does not significantly differ and is almost identical at 39 years old.

Examining *age and gender* showed that women working in social care are significantly older than men, with a median age of 43 years compared to 41 years amongst men.

Figure 2: Boxplot of age statistics by ethnicity of employees, NMDS-SC May 2009



Employees' profile and job roles

In this section, age, ethnicity and gender of employees are examined in relation to their main jobs. In Issue 1 of the *Social Care Workforce Periodical* we presented the distributions of social care employees by different job roles, as well as broader categories as defined by Skills for Care (see Hussein, 2009). Here we aim to investigate how different characteristics such as age, ethnicity and gender vary by different job roles, which are grouped as: direct care workers, manager/ supervisors, professionals and other workers (for full detailed of job roles see Appendix).

There are significant variations in terms of individuals' main job roles and the employment sector in which they work, as reported by employers (Pearson $\chi^2=11144$, $p<0.001$). As Table 5 shows, among NMDS-SC returns, more direct care workers are employed in the private and voluntary sector (with 74 percent and

71 percent of the care workforce in these sectors being direct care workers). This is followed by local authority-owned then local authority adult services, while direct care workers constitute only 50 percent and 29 percent respectively of the care workforce employed by local authority children's services and 'generic or other' services. In relation to the manager/supervisor group (which includes social workers, as defined by the categories used by Skills for Care⁴), the highest proportion is reported by employers in local authority children's and generic services at 32 percent each, and the lowest by employers in the private sector at seven percent. Professional staff, including occupational therapists, registered nurses and allied health professionals, are more frequently reported to be employed in the statutory health sector, at 8 percent, mainly due to the presence of nurses in the NHS; and they are least represented among local authority owned services at only 0.1 percent.

Table 5: Distribution of social care employees by job role groups and establishment type, NMDS-SC May 2009

Establishment type	Job role group				Total
	Direct Care	Manager/ Supervisor	Professional	Other	
Local authority - adult services	27602 63.5%	8301 19.1%	963 2.2%	6580 15.1%	43446 100%
Local authority - children's services	1314 48.8%	869 32.3%	68 2.5%	440 16.4%	2691 100%
Local authority (generic or other services)	137 29.5%	146 31.5%	16 3.4%	165 35.6%	464 100%
Local authority owned	953 70.6%	201 14.9%	2 0.1%	193 14.3%	1349 100%
Statutory health	726 63.6%	193 16.9%	90 7.9%	133 11.6%	1142 100%
Private sector	174612 73.5%	16961 7.1%	16983 7.1%	29162 12.3%	237718 100%
Voluntary or third sector	44079 71.2%	7245 11.7%	1832 3.0%	8786 14.2%	61942 100%
Other	7614 68.6%	1166 10.5%	345 3.1%	1976 17.8%	11101 100%

⁴ In the May 2009 NMDS-SC dataset provided by SfC, social workers were included in the managerial/supervisory rather than the professional category in error. This has subsequently been rectified.

Gender and job role

Figure 3 presents a visual representation, in the form of a mosaic plot, of the relationship of the distribution of employees by gender and grouped job role. The mosaic display shows the frequencies in the 2-way contingency (Table 6) of gender and job by nested rectangular regions whose area is proportional to the frequency in a cell or marginal sub-table. The mosaic plot starts as a square with length one. The square is divided first into horizontal bars whose widths are proportional to the probabilities associated with the first categorical variable. Then each bar is split vertically into bars that are proportional to the conditional probabilities of the second categorical variable. Additional splits can be made, if desired, using a third, fourth variable, etc. (Hartigan & Kleiner, 1984; Emerson, 1988). The differences presented visually are significantly different with Pearson $\chi^2 = 19648$ and $p < 0.001$.

Figure 3: Mosaic plot of the distribution of social care employees by recorded gender and job role grouped, NMDS-SC May 2009

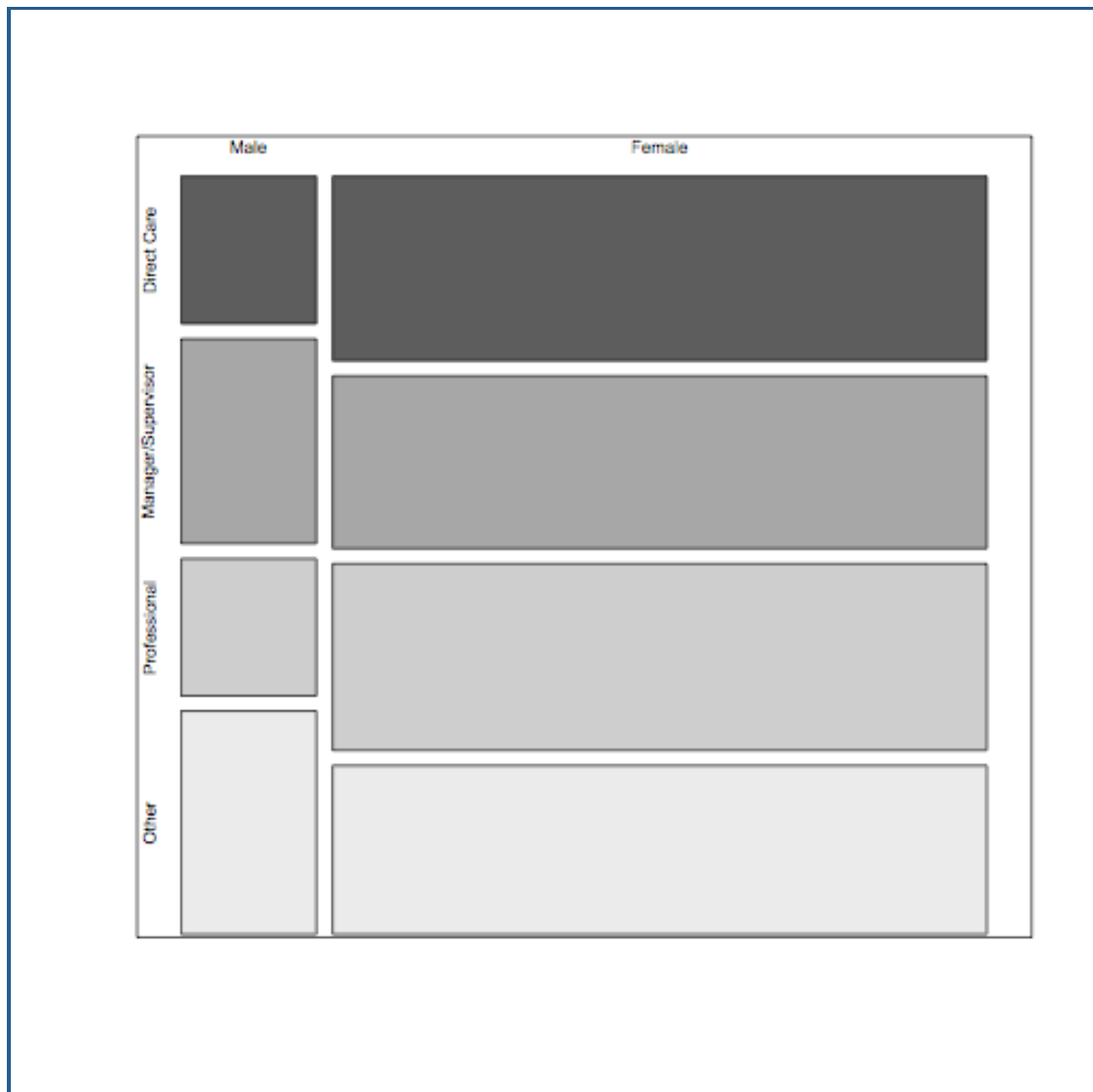


Table 6: Distribution of employees by gender and job role grouped, NMDS-SC May 2009

Job role group	Gender			
	Men		Women	
	N	%	N	%
Direct Care	32276	14.2	195060	85.8
Manager/ Supervisor	6282	19.7	25529	80.3
Professional	2274	13.2	14889	86.8
Other	9360	21.5	34192	78.5
Total	50192	15.7	269670	84.3

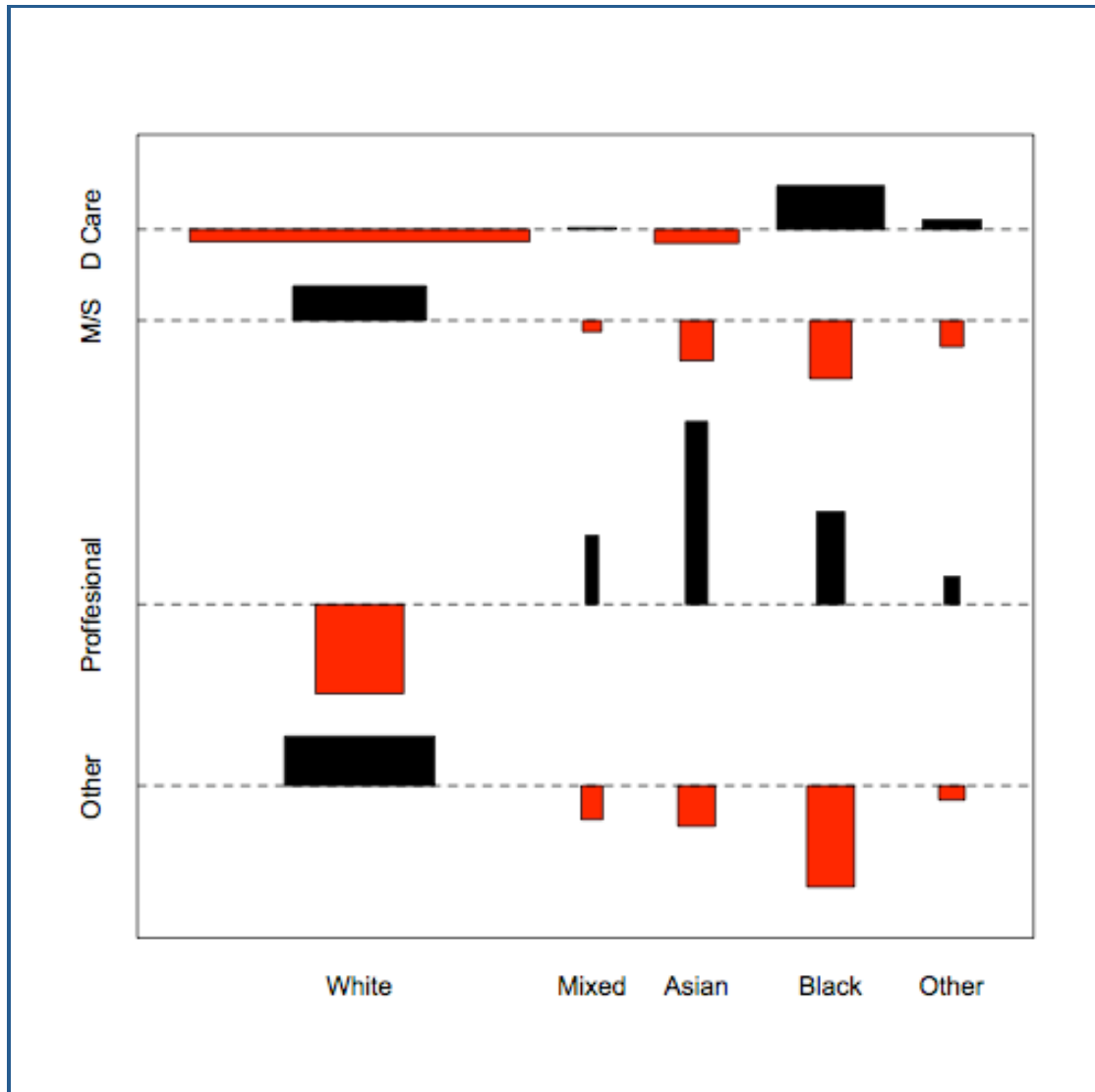
Figure 3 shows that although women form the majority across all groups, as represented by the width of the 'female' column, men are relatively over-represented in management/supervision roles, as represented by the relative area of this group in relation to the 'male' column. This is followed by 'other' job roles, which includes ancillary staff and individuals with non-direct care roles. On the other hand, women seem to be equally distributed across all job roles, albeit with slightly higher proportions among direct care workers.

Ethnicity and job role

Employees' *ethnicity* distribution, as reported by their employers, varies significantly by job role. Figure 4 presents a Cohen-Friendly association plot, which indicates deviations from independence of rows and columns in the two-dimensional contingency table of ethnicity by job role. It visualises the departures from expectations of the observed frequencies. The area of the box is proportional to the difference in observed and expected frequencies. The rectangles in each row are positioned relative to a baseline indicating independence. The black bars/rectangles show the excess above expected, while the red bars show categories where fewer people were observed than expected (Cohen, 1980; Friendly, 1992).

Figure 4 shows that white workers are significantly over-represented among managers/supervisors and 'other' workers. Asian workers are significantly over-represented among professional workers. Black workers form a significantly high proportion of direct care workers, followed by a slightly higher proportion of workers with 'other' ethnicities.

Figure 4: Association between job role (grouped) and employee ethnicity using Cohen-Friendly plot, NMDS-SC May 2009



Age and job role

In relation to *age*; Table 7 presents the median, mean and standard deviation of age by detailed job role. The data show that the youngest group of employees are 'nursery nurses', with a median age of 25 years old, followed by 'childcare worker or childcare assistants' with a median age of 37 years old. Most median ages were in the late 40s, with the highest median age of 53 years old among 'technicians'. Figure 5 and Table 6 present the same age statistics but according to job role groups.

Table 7: Median and mean age by main job role of employees, NMDS-SC May 2009

Main job role	Number of employees	Median age	Mean age	Standard deviation
Senior Management	3628	47	46.5	10.2
Middle Management	3274	46	45.2	9.9
First Line Manager	5401	45	44.6	10.1
Registered Manager	6754	47	47.0	9.3
Supervisor	5245	45	44.3	10.5
Social Worker	2688	45	44.8	10.2
Senior Care Worker	22708	42	42.3	11.2
Care Worker	185538	40	39.9	12.4
Community Support and Outreach Work	11670	43	42.4	11.9
Employment Support	382	45	44.2	11.2
Advice Guidance and Advocacy	259	45	44.3	11.4
Educational Support	217	45	43.3	12.6
Youth Offending Support	25	40	41.1	12.6
Counselor	63	46	44.7	10.6
Occupational Therapist	542	45	44.5	10.5
Registered Nurse	16683	45	45.2	10.4
Allied Health Professional	661	48	47.0	10.5
Nursery Nurse	73	25	29.8	10.5
Childcare Worker or Childcare Assistant	617	37	37.9	11.6
Teacher	357	48	46.2	10.5
Educational Assistant	476	39	39.5	11.7
Technician	685	53	50.6	10.9
Other care-providing job role	7973	44	42.5	13.0
Managers and staff in care-related but not care-providing roles	3335	46	45.2	11.2
Administrative or office staff not care-providing	8907	45	43.7	12.2
Ancillary staff not care-providing	24246	47	44.9	13.4
Other non-care-providing job roles	6901	46	44.7	13.1
All workers (16-65)	319407	42	41.7	12.3

Figure 5: Box plot presentation of age statistics of employees according to main job role groups, NMDS-SC May 2009

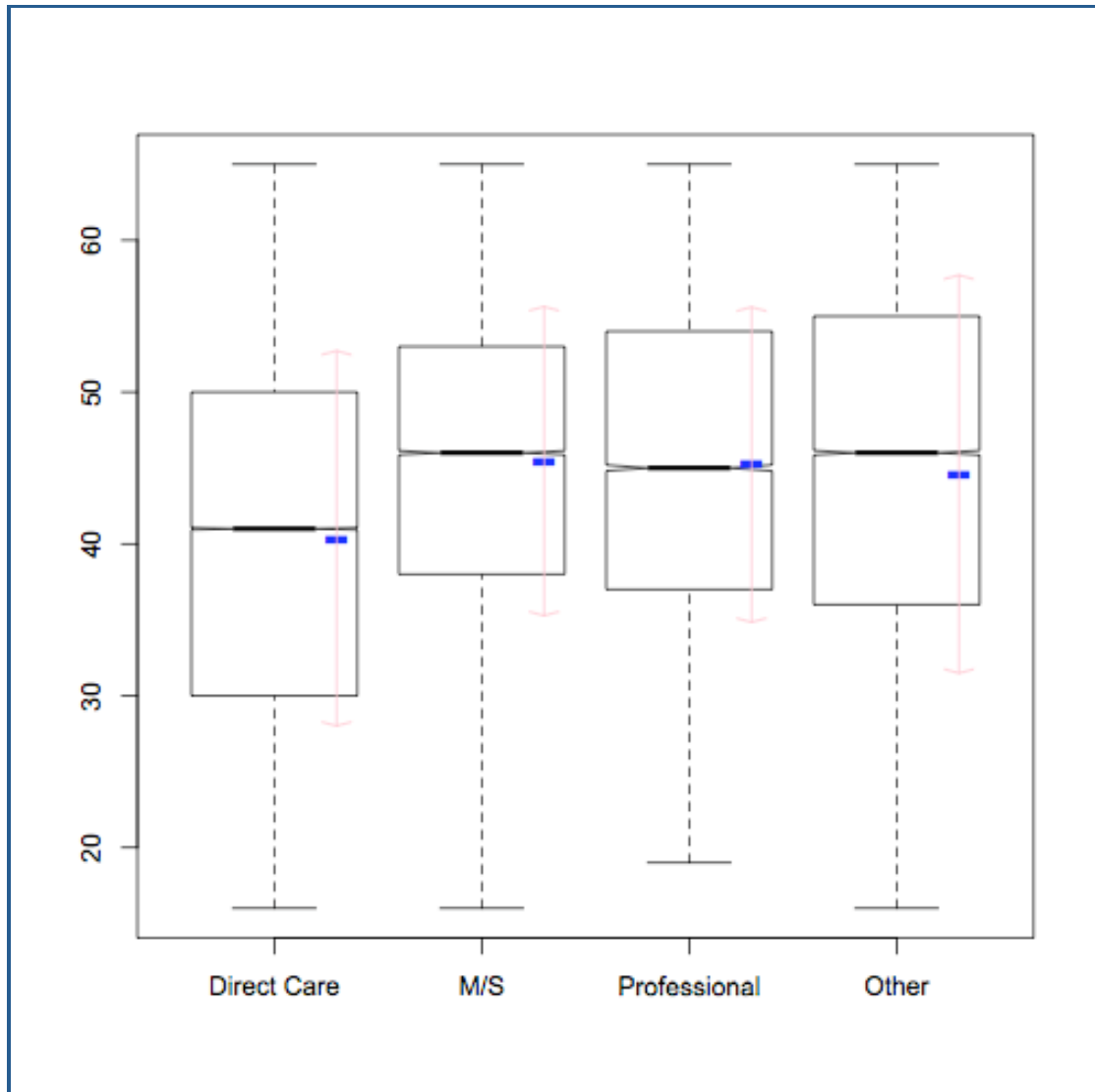


Table 8 shows that the median age is lowest among direct care workers, at 41 years, with at least 4 years difference in median between employees in other age groups. Figure 5 shows that the difference in median age between care workers and other employees is significant, using Tukey's notches technique; however, the median age of managers/supervisors is not significantly different from employees with other job roles (46 years). It is worth noting that the distance between the 1st and 3rd quartiles of age among managers and supervisors is relatively narrower than other groups, and that the 1st quartile starts at a relatively higher age. These statistics indicate that the group of managers/supervisors not only has one of the highest median ages but also, not surprisingly, contains many fewer younger people.

Table 8: Median and mean age of employees by main job role groups, NMDS-SC May 2009

Job role group	Number of workers	Median age	Mean age	Standard deviation
Direct Care	230686	41	40.4	12.4
Manager/Supervisor	30325	46	45.5	10.2
Professional	18243	45	45.2	10.4
Other	40153	46	44.6	13.1
All workers (16-65)	319407	42	41.7	12.3

Conclusion

In this issue of Social Care Workforce Periodical we explored the variation of social care employees' characteristics in relation to the sector they work in, as well as their main job roles, as indicated by their employers in their returns to NMDS-SC. The analysis shows that the median age of all employees is 42 years. This is very similar to the average age of nurses in the UK (42 years; ICN, 2006). However, there are significant variations in the median age according to both the sector in which employees are employed and the main job that they perform. However, it is important to keep these findings in the context of NMDS returns, where the independent sector is over-represented and statutory sector under-represented, and a follow up analysis at future date may establish these findings.

Social care employees in the statutory sector are significantly older than those employed in the voluntary or private sector, with the gap ranging from 4 to 7 years. Employees in the private sector are significantly younger than other employees, with median age of 40 years (mean=39.2 years). Similarly, employees working with a flexible work pattern, such as part time staff, have the youngest median age of 40 years.

In terms of job roles and age, direct care workers are significantly younger than other groups with a median age of 41 years, while the oldest group is 'managers/supervisors' at 46 years. It is worth noting that Skills for Care considers social workers (median age= 45) to be part of the managers/supervisors group. Age also interacted with other employees characteristics such as ethnicity and gender: Asian employees have the lowest median age of 37 years, while White employees have the highest median age of 44 years. Men are significantly older than women, with a two-year gap in median age.

Black and minority ethnic employees comprise 17.4 percent of all employees for whom employers provided information on ethnicity, with the majority identified as Black or Black British (8.2 percent), followed by Asian or Asian British (5.1 percent) and two to three percent Mixed and Other ethnicity respectively. Significantly more BME employees are employed in the statutory health sector (29 percent) followed by the private sector at 19.6 percent. The lowest

proportion of BME employees is reported among 'local authority - generic or other' services at 5.3 percent. In terms of job roles, White employees are proportionally over represented among managers/supervisors and other job role groups, while Asian employees are considerably over represented among professional workers. Employees identified by their employers as Black or Black British are over represented among direct care and professional job role groups.

It is well known that the social care workforce is gender biased, with women forming 84 percent of the workforce. Men are significantly more represented among manager/supervisor (20 percent) and other (22 percent) job role groups. Men are also relatively over-represented in the voluntary sector (19 percent) and local authority owned establishments.

The findings show not only that the social care workforce is an aged workforce as a whole, but also that some job groups and workers in the statutory sector are significantly older than average. Significant variations are observed in terms of ethnicity, gender and age, highlighting the importance of equality and diversity practices within various social care establishments. However, these findings relate to current returns to the NMDS-SC, which may have a number of limitations as discussed above and in the appendix. Therefore, further analyses are needed as the NMDS becomes more representative of the English care sector.

References

Eborall, C. and Griffiths, D. (2008) *The State of the Adult Social Care Workforce in England 2008. The Third Report of Skills for Care's Skills Research and Intelligence Unit*. Leeds: Skills for Care.

Emerson, J. W. (1998). "Mosaic displays in S-PLUS: A general implementation and a case study." Statistical Computing and Graphics Newsletter (ASA) **9**(1): 17-23.

Cohen, A. (1980). "On the graphical display of the significant components in a two-way contingency table." Communications in Statistics - Theory and Methods **A9**: 1025-1041.

Friendly, M. (1992). "Graphical methods for categorical data." SAS User Group International Conference Proceedings **17**: 190-200.
<http://www.math.yorku.ca/SDS/sugi/sugi17-paper.html> (accessed 24th September 2009).

Hartigan, J. A. and B. Kleiner (1984). "A mosaic of television ratings." The American Statistician **38**: 32-35.

Hussein, S. (2009). The size, role and stability of the social care workforce in England. Social Care Workforce Periodical. London, Social Care Workforce Research Unit, King's College London. Issue **1**.
<http://www.kcl.ac.uk/content/1/c6/06/18/41/SCWPIssue1workingpaper.pdf>

International Council of Nurses (2006). Nursing Workforce Profile. Geneva, ICN.
<http://www.icn.ch/SewDatasheet06.pdf> (accessed 28th August 2009).

Manthorpe, J. and Moriarty, J., 2009, 'Older workers in social care' in 'Older Workers in Europe' eds Chiva T and Manthorpe J., Maidenhead, Open University Press

McNair, S. and M. Flynn (2006). Managing an ageing workforce in health and social care: A report for employers. Leicester, Centre for Research into the Older Workforce.

Rousseeuw, P. J., I. Ruts, et al. (1999). "The Bagplot: A Bivariate Boxplot." The American Statistician **53**(4): 382-387.

Appendix

About NMDS-SC

The NMDS-SC is the first attempt to gather standardized workforce information for the social care sector. It is developed, run and supported by Skills for Care and aims to gather a 'minimum' set of information about services and staff across all service user groups and sectors within the social care sector in England. The NMDS-SC was launched in October 2005 and the online version in July 2007 and since then there has been a remarkable increase in the number of employers completing the national dataset.

Two data sets are collected from employers. The first gives information on the establishment and service(s) provided as well as total numbers of staff working in different job roles. The second data set is also completed by employers; however, it collects information about individual staff members. Skills for Care recommends that employers advise their staff they will be providing data through the completion of the NMDS-SC questionnaires. No written consent from individual members of staff is required, however, ethnicity and disability are considered under the Data Protection Act to be '*sensitive personal data*', thus it is recommended that consent for passing on these two items needs to be explicit. For further details on NMDS-SC please visit <http://www.nmds-sc-online.org.uk/>

The NMDS-SC has provided the sector with a unique data set, providing information on a number of the workforce characteristics. However, it is important to highlight the emerging nature of the NMDS-SC, mainly due to the fact that data have not been completed by '*all*' adult social care employers in England, at this stage. Therefore, some of the findings may be under or over-represented as a result of this. It is also equally important to bear in mind that data are completed by employers and not employees, this may also pause some technical considerations when interpreting the findings. SCWP will address such issues in relevant discussions of findings.

Job roles are grouped by Skills for Care into four main categories for ease of comparison:

1. Manager/supervisor

- Senior Management
- Middle Management
- First Line Manager
- Registered Manager
- Supervisor
- Social Worker
- Managers and staff in care-related but not care-providing role

2. Direct care

- Senior Care Worker
- Care Worker
- Community, Support and Outreach Work
- Employment Support
- Advice, Guidance and Advocacy
- Educational Support
- Youth Offending Support
- Counsellor
- Nursery Nurse
- Childcare Worker or Childcare Assistant
- Educational Assistant
- Technician
- Other job role directly involved in providing care

3. Professional

- Occupational Therapist
- Registered Nurse
- Allied Health Professional (other than Occupational Therapist)
- Teacher (qualified)

4. Other

- Administrative / office staff not care-providing
- Ancillary staff not care-providing
- Other job role not directly involved in providing care
- Not Recorded

Details of establishment types as defined by Skills for Care.

Sector	Definition
Local authority adult services	The central support staff teams and social work teams of the local authority adult social care services, i.e. non-direct care for older people and adults aged 18+
Local authority children's services	The central support staff teams and social work teams of the local authority children's social care services, i.e. non-direct care for children and young people aged under 18.
Local authority generic/other services	The central support staff teams and social work teams of the local authority social care services, i.e. non-direct care for people of all ages, not specifically for adults or children.
Local authority owned provision	A local authority employing organisation where the care setting is owned and operated by a local authority with local authority-employed staff, e.g. day care centre, care home, domiciliary care etc.
Statutory health	An NHS employing organisation, e.g. Primary Care Trust, a Health or Care Trust, a Special Health Authority or a GP Practice, or another public sector health service organisation
Private	Private sector, generally operating for profit, even if all the services provided are purchased by one or more local authorities.
Voluntary	Includes a range of organisations: voluntary and community sector organisations, registered charities, non-charitable non-profit organisations, associations, self-help groups, community groups, social enterprises, mutual and co-operatives, generally operating as 'not for profit' or non-profit distributing.
Other	None of the above