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Comparative study on the rural-urban employment status of low-income individuals (B40 group) with hypertension in Malaysia: The RESPOND study

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Abstract

Background: There is a relationship between poor people being more likely to develop non-communicable diseases. This study was conducted to compare the socio-demographic differences mostly looking at the employment status between urban and rural low-income individuals (B40 group) with hypertension in Malaysia.

Material and Methods: The communities were selected from rural and urban populations in four peninsular states. Following a multistage sampling approach, communities in each stratum were selected according to probability proportional to the size and identified based on national census data. Households were randomly selected. Eligible individuals were those aged between 35 and 70 years old, self-reported or identified as hypertensive at screening. Informed consent was taken. A survey using validated questionnaires was conducted.

Results: A total of 611 respondents were involved in this study. 308 (49.6%) were from urban and 308 (50.4%) were from rural areas. The characteristics of the sociodemographic from both locations were comparable ($p>0.05$) except for the job description ($p<0.001$). There were around 50% worked full-time employment and 75.8% disagree that they lost their job within 6 months. There was no significant difference in household income between urban and rural respondents ($p=0.550$). Unfortunately, there was only a third of them received regular cash transfers, subsidies or payments through B40 Malaysia and 14.0% of the respondents had no more income after deducting taxes.

Conclusion: There were not so many differences in the characteristics of the respondents in both locations except for the job description. It might be helpful for the government in the formulation the policies to reduce the poverty and assist this population to receive medical treatment to control their hypertension.

Keywords: Comparative study; Rural-Urban Employment Status; Low-Income Individuals; Hypertension

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1. Introduction

It has been estimated that the population of Malaysia in 2021 was 32.7 million involving 16.8 million males and 15.9 million females which was a 1.13% increase from 2020 (1). Since gaining independence in 1957, Malaysia has successfully diversified its economy from initial agriculture to robust manufacturing and services sectors. In 2015, the poverty rate in Malaysia was 2.90%, a 1.1% decline from 2013 (2). However, according to government statistics, the COVID-19 pandemic led to an increase in the share of Malaysian households living below the national poverty line to 8.4% in 2020 from 5.6% in 2019 (3). Under the current "Malaysia e-Kasih National Database", it was noted that 550,000 people were poor and of the number, 262,000 were categorised as hardcore poor with a household income of less than RM 1,169 per month (4).

In Malaysia, a rural area is defined as an area outside urban including settlements with a population of less than 10,000 people, an agricultural area, forest and water bodies (5). In 2021, the rural population in Malaysia was 7.31 million**,** a 1.11% decline from 2020 (2). Rural populations are overwhelmingly poor across the globe (6) and it has been estimated that 1.4 billion people live in extreme poverty with more than 70% of them living in rural areas of developing countries (7). A report from Statista Research Development (8) stated that the poverty rate in a rural area in Malaysia was 12.4% in 2019. In Europe, rural areas have been neglected in their specific features in the analysis of poverty and respect for the problems of rural poverty is extremely weak (9).

Malaysia's urban population for 2021 was 25.5 million, a 1.97% increase from 2020 (2). In 2019, the poverty rate in the urban area in Malaysia was 3.8% (8). Many factors contributed to urban poverty including migration from rural areas to urban mega-city, lack of opportunities and skills training, lack of affordability, high birth rate and lack of quality education (10). The lack of education and low-skilled without formal training also make the urban poor vulnerable to exploitation (11). The families also often face a lack of community support, inadequate housing, poor access to education and higher costs of living (11).

In 2021, there are more poor people living in Malaysia's urban areas than in rural areas**.** It was estimated that the urban poverty rate was 45% higher compared to rural poverty (4). The rural-urban migration of youth due to urbanization increases around the world including in Malaysia, people began moving to cities for better employment (12). By using time series data from 1980 to 2011, it has been found that the relationship between rural-urban migration is positively influenced by the level of household income and negatively influenced by the unemployment rate for rural and urban migration in Malaysia (13).

A report by the World Health Organization (14) shows the relationship between poor people being more likely to develop non-communicable diseases and two-thirds of CVD-related deaths globally occurring in developing nations (15). Hypertension in those living in the urban area in African developing countries such as Tanzania, Cameroon and Dar es Salaam was higher compared to rural areas (16). In Cameroon, illiterate people in urban areas had higher systolic blood pressure compared to educated university people. (17). In Canada, poverty contributes 3% to the variation in mortality from cardiovascular disease (18).

Studies have been conducted on poverty between rural and urban areas and there were many discussions on it. However, not many studies conducted on specific patients such as hypertension including in Malaysia. Therefore, this study was conducted to compare the socio-demographic differences mostly looking at the employment status between urban and rural low-income individuals (B40) hypertensive in Malaysia.

2. Material and methods

Data were collected within the 'Responsive and Equitable Health Systems – Partnership on Non-communicable Diseases' (RESPOND) Project, being undertaken in Malaysia and the Philippines. Unlike the surveys described earlier that offer wide coverage of the country, RESPOND has been designed to gain in-depth knowledge of the lived experience of those with hypertension living in low-income communities using a mix of quantitative and qualitative methods, with a particular emphasis on their therapeutic journeys. The protocol and detailed methodology have been published.

2.1 Definitions

At the time when the study was planned, those in the low-income individuals (B40) category had a household income of less than RM3,855 (€832; US$932) (level set in 2014). The cut-off point has changed over time. Those in the B40 category can be found in urban and rural areas and the study design included communities in both settings. Urban and rural areas were defined according to the Malaysian Population and Housing Census 2000 (20).

2.2 Sampling method

The urban and rural B40 communities were selected using a multistage sampling approach. The first stage was a purposive selection of four states in Peninsular Malaysia, Selangor, Perak, Kelantan, and Johor, all larger states with a mix of urban and rural communities. The second stage was the selection of 24 communities, three urban and three rural from each of the four states. Communities in each stratum were selected according to probability proportional to size using sampling frames based on national census data by the community and administrative registers. The third stage involved the recruitment of 25 households from each community, randomly selected using a random online generator. Nearby communities were substituted where it was not feasible to ensure high levels of engagement with the chosen communities. This could arise from a lack of community support, the security risk for study personnel, inaccessibility by usual means of transportation, poor internet connection, or the existence of ongoing activities that may affect hypertension treatment-seeking behaviour.

2.3 Study population

The study population comprised adults aged 35 to 70 years old with hypertension, living within B40 households that were expected to remain at the current address for at least 18 months from the date of screening, with either a self-reported history of hypertension (previously diagnosed whether on or off treatment) or found to have elevated blood pressure at screening. B40 households were identified by asking the household income directly of less than RM3,855 (€832; US$932) (level set in 2014) of the respondents. Exclusion criteria were those with a self-reported history of major chronic co-morbidities that required regular contact with the health system such as cancer or HIV and those who were planning to move within the next 18 months. High blood pressure on screening was defined as when the average of two blood pressure measurements > 140/90 mmHg (using an OMRON blood pressure recorder from the non-dominant arm while in a sitting position after at least 5 minutes rest).

2.4 Study procedure and data collection process

A maximum of three attempts were made to contact identified households, with the substitution of another randomly selected household if contact could not be made. When a household responded but refused to participate in the full study, simple demographics, risk factors and cardiovascular disease (CVD) history were recorded. When an eligible household was identified and agreed to participate, all adults in the household were enumerated and initial data were collected using a household census form. Screening for eligibility was conducted and if more than one hypertensive individual was identified one was selected at random using a probability-based method and invited to participate. If none were present another household was selected. Those who agreed were provided with written informed consent and enrolled. A brief non-responder form was completed for those participants who refused, and substitute participants were asked.

2.5 Variable of interest

The variable of interest for the comparison was the location which is urban and urban. The socio-demographic status includes age group, gender, ethnicity, marital status and educational status and tobacco user. The job description includes working status (yes or no), employment status (full-time, self-employed, part-time and casually employed), reason not currently employed, job description, will lose the job within 6 months, can easily take time-off while working, do more than one paid job, the description of the second job, the status of employed for the second job, may lose the second job within 6 months and can easily take time-off while working for the second job.

The income status includes the status of receiving any regular cash transfer, subsidies or payments through the B-40 Malaysia or any other state or NGO benefits or support program, any household member received any seasonal irregular one-off payments during the year, income per month (in Malaysia Ringgit) and monthly household income after deducting taxes. All of the interest variables were in the categorical data.

2.6 Ethical considerations

Ethical approval was provided by the National Medical Research Register, the Research Ethics Committees at LSHTM (Ref: 12214) and Universiti Teknologi MARA (600-IRMI(5/1/6) REC/313/18). We followed the Ethical Guidelines for good research practice of the Association of Social Anthropologists of the UK and the Commonwealth (ASA) (Association of Social Anthropologists, 2011). The research protocol addressed key principles set out in Wellcome Trust guidance notes on conducting ethical research involving people in low- and middle-income countries (21).

2.7 Data analysis

Data were managed and analyzed using the Statistical Package for Social Science (SPSS) Version 27.0 (SPSS, Inc, Chicago, IL, version 27.0). Descriptive analyses were used to report sociodemographic characteristics based on the location (urban and rural). Normally distributed data were presented with means and standard deviations. Categorical data were presented as frequencies (n) and percentages (%). The comparison of the variable interests between rural and urban respondents and other categorical variables was analyzed using Chi-square or Fisher exact's test. Significance was set at a p-value < 0.05.

3. Results

A total of 611 respondents were involved in this study. There were 308 respondents from the urban area and 303 respondents from the rural area. The sociodemographic of the respondents stratified by location are shown in Table 1.

Table 1 The sociodemographic differences between urban and rural communities (N=611)

Variables	Urban (N=308), n (%)	Rural(N=303), n (%)	Total (N=611), n(%)	p-value
Age group				**0.592**
Less than 50	43 (14.0%)	39 (12.9%)	82 (13.4%)	
50 – 59 years old	109 (35.4%)	98 (32.3%)	207 (33.9%)	
60 and above	156 (50.6%)	166 (54.8%)	322 (52.7%)	
Gender				**0.222**
Male	75 (24.4%)	87 (28.7%)	162 (26.5%)	
Female	233 (75.6%)	216 (71.3%)	449 (73.5%)	
Ethnicity				**0.137**
Malay	297 (96.4%)	298 (98.3%)	595 (2.6%)	
Non-Malay	11 (3.6%)	5 (1.7%)	16 (97.4%)	
Marital status:				0.217
Never married	7 (2.3%)	4 (1.3%)	11 (1.8%)	
Currently married	212 (68.8%)	229 (75.6%)	441 (72.2%)	
Widowed	76 (24.7%)	63 (20.8%)	139 (22.7%)	
Separated & divorced	13 (4.2%	7 (2.3%	20 (3.3%)	
Educational Status				**0.664**
No formal education	28 (9.1%)	24 (7.9%)	52 (8.5%)	
Primary	123 (39.9%)	136 (44.9%)	259 (42.4%)	
Secondary	149 (48.4%)	136 (44.9%)	285 (46.6%)	
Vocational & University	8 (2.6%)	7 (2.3%)	15 (2.5%)	
Tobacco user				**0.498**
Never	244 (83.0%)	248 (84.1%)	492 (83.5%)	
Formerly	23 (7.8%)	27 (9.2%)	50 (8.5%)	
Currently	27 (9.2%)	20 (6.8%)	47 (8.0%)	

Table 2 The comparison of the employment status between rural and urban community (N=611)

Employment Status	**Urban (N=308), n (%)**	**Rural (N=303), n (%)**	**Total (N=611), n(%)**	**p-value**
Currently employed:				
No	246 (79.9%)	232 (76.6%)	478 (78.2%)	0.323
Yes	62 (20.1%)	71 (23.4%)	133 (21.8%)	
Status employed (N=133):	(n=62)	(n=71)	(n=133)	
Full-time employed	35 (56.5%)	41 (57.7%)	76 (57.1%)	0.714#
Self-employed	17 (27.4%)	20 (28.2%)	37 (27.8%)	
Part-time employed	9 (14.5%)	7 (9.9%)	16 (12.0%)	
Casually employed	1 (1.6%)	3 (4.2%)	4 (3.0%)	
Reason not currently employed (N=478):	(n=246)	(n=232)	(n=478)	
Homemaker / caring for family	156 (63.4%)	143 (61.6%)	299 (62.6%)	0.620#
Retire / too old to work	75 (30.5%)	74 (31.9%)	149 (31.2%)	
Health problems / disabled	14 (5.7%)	11 (4.7%)	25 (5.2%)	
Could not find a job	1 (0.4%)	1 (0.4%)	2 (0.4%)	
Have to take care of family member	0 (0.0%)	2 (0.9%)	2 (0.4%)	
Do voluntary work	0 (0.0%)	1 (0.4%)	1 (0.2%)	
Job description:	(n=62)	(n=71)	(n=133)	
Food preparation and serving related occupations	16 (25.8%)	14 (19.7%)	30 (22.6%)	<0.001#*
Farming, fishing and forestry occupations	1 (1.6%)	21 (29.6%)	22 (16.5%)	
Transportation and material moving occupations	11 (17.7%)	4 (5.6%)	15 (11.3%)	
Sales and related occupations	6 (9.7%)	8 (11.3%)	14 (10.5%)	
Business and financial operations occupations	2 (3.2%)	8 (11.3%)	10 (7.5%)	
Building and grounds cleaning and maintenance occupations	5 (8.1%)	1 (1.4%)	6 (4.5%)	
Construction and extraction occupations	4 (6.5%)	2 (2.8%)	6 (4.5%)	
Personal care and service occupations	3 (4.8%)	2 (2.8%)	5 (3.8%)	
Office and administrative support occupations	2 (3.2%)	2 (2.8%)	4 (3.0%)	
Production occupations	1 (1.6%)	2 (2.8%)	3 (2.3%)	
Protective service occupations	2 (3.2%)	1 (1.4%)	3 (2.3%)	
Community and social service occupations	2 (3.2%)	1 (1.4%)	3 (2.3%)	
Arts, design, entertainment, sports and media occupations	3 (4.8%)	0 (0.0%)	3 (2.3%)	
Installation, maintenance and repair occupations	2 (3.2%)	0 (0.0%)	2 (1.5%)	
Management occupations	1 (1.6%)	1 (1.4%)	2 (1.5%)	

Education, training and library occupations	0 (0.0%)	2 (2.8%)	2 (1.5%)	
Architecture and engineering occupations	1 (1.6%)	0 (0.0%)	1 (0.8%)	
Healthcare practitioners and technical occupations	0 (0.0%)	1 (1.4%)	1 (0.8%)	
Refused	0 (0.0%)	1 (1.4%)	1 (0.8%)	
Within 6 months, will lose the job (N=133):	(n=62)			0.279#
Strongly disagree	7 (11.3%)	6 (8.5%)	12 (9.8%)	
Disagree	47 (75.8%)	53 (74.6%)	100 (75.2%)	
Agree	6 (9.7%)	12 (16.9%)	18 (13.5%)	
Refused	2 (3.2%)	0 (0.0%)	2 (1.5%)	
Can easily take time off (N=133):	(n=62)			0.566#
Strongly disagree	2 (3.2%)	4 (5.6%)	6 (4.5%)	
Disagree	13 (21.0%)	21 (29.6%)	34 (25.6%)	
Agree	43 (69.4%)	43 (60.6%)	86 (64.7%)	
Strongly agree	3 (4.8%)	3 (4.2%)	6 (4.5%)	
Refused	1 (1.6%)	0 (0.0%)	1 (0.8%)	
More than one paid job (N=133):	(n=62)			1.000#
No	59 (95.2%)	67 (94.4%)	126 (94.7%)	
Yes	3 (4.8%)	4 (5.6%)	7 (5.3%)	
Second most important job (N=7):	(n=3)	(n=4)		0.136#
Farming, fishing and forestry occupations	0 (0.0%)	3 (75.0%)	3 (42.9%)	
Food preparation and serving related occupations	1 (33.3%)	0 (0.0%)	1 (14.3%)	
Production occupations	0 (0.0%)	1 (25.0%)	1 (14.3%)	
Transportation and material moving occupations	1 (33.3%)	0 (0.0%)	1 (14.3%)	
Refused	1 (33.3%)	0 (0.0%)	1 (1.4.3%)	
Status employed second job:	(n=3)	(n=4)		0.143#
Part-time employed	3 (100.0%)	1 (25.0%)	4 (57.1%)	
Self-employed	0 (0.0%)	3 (75.0%)	3 (42.9%)	
May lose second job within 6 months:	(n=3)	(n=7)		0.350#
Strongly disagree	0 (0.0%)	1 (25.0%)	1 (14.3%)	
Disagree	2 (66.7%)	3 (75.0%)	5 (71.4%)	
Refused	1 (33.3%)	0 (0.0%)	1 (14.3%)	
Can easily take time off for second job (n=7):	(n=3)	(n=4)		0.525#
Disagree	1 (33.3%)	1 (25.0%)	2 (28.6%)	
Agree	1 (33.3%)	2 (50.0%)	3 (42.9%)	
Strongly agree	0 (0.0%)	1 (25.0%)	1 (14.3%)	
Refused	1 (33.3%)	0 (0.0%)	1 (14.3%)	

Statistical test: Chi-square test; # Fisher exact's test

The majority of urban respondents were 60 years old and above (50.6%), females (75.6%), Malay (96.4%), currently married (68.8%), having secondary school education (48.4%) and not a tobacco user (83.0%). The sociodemographic of the rural respondents were almost the same as urban respondents where the majority of them are 60 years old and above (54.8%), females (71.3%), Malay (98.3%), currently married (75.6%), having primary and secondary school education (44.9%) and not a tobacco user (84.1%). There were no statistically significant differences in the socio-demographic status between rural and urban communities ($p<0.05$) meaning that the sociodemographic of both respondents are comparable.

Table 3 The comparison of the income status between rural and urban community (N=611)

Variables	Urban (N=308), n (%)	Rural (N=303), n (%)	Total (N=611), n(%)	p-value
Any household receive any regular cash transfer, subsidies or payments through the B-40 Malaysia or any other state or NGO benefits / support program? (N=611)				
Yes	120 (39.0%)	98 (32.3%)	218 (35.7%)	0.088
No	188 (61.0%)	205 (67.7%)	393 (64.3%)	
Household member receive any seasonal irregular of one-off payments during the year (N=608)	(n=307)	(n=301)	(n=608)	
Yes	15 (4.9%)	14 (4.7%)	29 (4.8%)	0.218#
No	281 (91.5%)	283 (94.0%)	564 (92.8%)	
Don't know / remember	9 (2.9%)	2 (0.7%)	11 (1.8%)	
Refused	2 (0.7%)	2 (0.7%)	4 (0.7%)	
Income (in RM) (N=444)	(n=216)	(n=228)	(n=444)	
Less than RM1000	48 (22.2%)	39 (17.1%)	87 (19.6%)	0.550
RM1000 – RM1499	36 (16.7%)	42 (18.4%)	78 (17.6%)	
RM1500 – RM1999	33 (15.3%)	37 (16.2%)	70 (15.8%)	
RM2000 – RM2499	39 (18.1%)	48 (21.1%)	87 (19.6%)	
RM2500 – RM2999	47 (21.8%)	42 (18.4%)	89 (20.0%)	
RM3000 and above	13 (6.0%)	20 (8.8%)	33 (7.4%)	
Current total monthly household income in Ringgit after deducting taxes (N=167)	(n=93)	(n=74)	(n=167)	
No income	10 (10.8%)	10 (13.5%)	20 (12.0%)	
Unknown / refuse	83 (89.2%)	64 (86.5%)	147 (88.0%)	0.585

Statistical test: Chi-square test; # Fisher exact's test

Table 2 shows the comparison of the employment status between the rural and urban communities. The percentage of currently working among rural respondents was higher compared to urban respondents. However, there was no statistically significant ((0.323). The employment status of both respondents was comparable ($p>0.714$) where more than 50% are full-time employed. The reasons for both respondents which not currently employed was also comparable where the majority of both respondents were homemaker and cared for their family. There was a significant difference in the job description for both respondents. The majority of the urban respondents were in the food preparation and serving related occupations industry (25.8%) and for the rural respondents, the majority of them were in farming, fishing and forestry occupations (29.6%). Both respondents mentioned that they disagree that they lost their job within 6 months (75.8% versus 74.6%) but they were agreeing can easily take time off (69.4% versus 60.6%).

Among those who are working, only a few have a second-paid job. However, there was no significant difference between urban and rural respondents (p=1.000). However, they are doing only part-time jobs. They disagree that they may lose their second job within 6 months. Same with their first job, they agree that they can easily take time off while doing their work.

Table 3 shows the comparison of the income status between the rural and urban communities. More than a third of the respondents in both locations received regular cash transfers, subsidies or payments through the B-40 Malaysia or any other state or NGO benefits. Urban respondents received more compared to rural respondents (39.0% versus 32.3%). However, there was no significant difference between these two locations (p=0.088). There were less than 5% received seasonal irregular one-off payments during the year. There was no significant difference in household income between urban and rural respondents (p=0.550). However, around 14% of the respondents in both locations told that there was no more income after deducting taxes.

4. Discussion

Poverty is a complex phenomenon and covers many dimensions of human and social behaviours and becoming challenging due to its multi-dimensional nature. Hardcore poverty registered in Malaysia was 0.4 percent in 2019 as compared to 0.6 percent in 2016 (22) and a poverty mapping study in Pahang, Malaysia found the incidences of poverty and hard-core poor in rural areas were significantly higher compared to urban areas (23). Based on the results of this study, there were not so many differences in the characteristics of the sociodemographic of the B40 groups with hypertension in urban and rural areas (p>0.05). Therefore, redistribution of income might achieve not only greater equality but also faster growth and faster poverty reduction (24).

A poverty mapping study in Pahang, Malaysia also found the incidence of poverty was higher among Malays which was 94.1% in rural areas and 82.0% in urban areas (23). This result was almost the same with the B40 group with hypertension in both locations. Bumiputera (mostly Malay ethnicity) is the poorest of the major ethnic group in Malaysia where 90.4% of them are staying in rural areas (25). One of the reasons is Malaysia's colonial legacy left inequality at the time of independence in 1957. However, the Malaysian government has a long-term effort to reduce ethnic or racial disparities to manage overall relative inequality (26).

The majority of the B40 group with hypertension in both locations were 60 years old and above, female and homemakers. However, there was no significant difference in both locations (p>0.05). A study by Masud and Zainalaludin (27) also found that females who are older and homemakers were more likely to be poor compared to their counterparts. Female elderly is usually not received income on their own. Poverty among the elderly rate is almost two-thirds higher among females than males with 12 percent compared to males at only 7 percent (28). They need to support their life by depending on other people such as their children (27). There was no significant difference in the marital status in the B40 group with hypertension in both locations (p=0.217). The result was different compared to a study by Social Security (28) found those who never-married aged 65 or older has the highest poverty rate among all groups, followed by those who were divorced and widowed and unmarried females are significantly more likely than males to be poor. Poverty depends on how the marriage ended and the number of children in the household. The combination of divorce and more children at home increases poverty (29). Education is linked with economic growth (30). The majority of the respondents have secondary school education in both locations (46.6%), however, there was no significant difference. A study by Siwar, Ahmed (23) found the incidence of poverty is the lowest among households whose heads completed secondary school and above.

Tobacco use is concentrated among the poor and other vulnerable groups including poor people (31). In this study, most of the respondents were not tobacco users (83.3%) and there was no significant difference between these two locations (p=0.498). It could be during the survey, there were more females at home and involved with the study. In National Health and Morbidity Survey, 2019 (NHMS, 2019) found the prevalence of smoking among females in very low [(1.2% (95%CI: 0.85, 1.70)] compared to males [40.5% (95% CI: 37.90, 43.06)] (32). However, the prevalence of any tobacco use among B40 with hypertension was lower compared to the NHMS 2019 where the prevalence among the rural population was 27.5% (95%CI: 24.7, 30.6) and in urban was 22.1% (95%CI: 20.6, 23.7) (32). Tobacco use will increase health care costs, reduces income, and decreases productivity which can make the poor poorer. Therefore, good tobacco control policies and tax increases can change that (31).

In this study, most of the respondents were not working (78.2%) and there was no significant difference between these two locations (p=0.323). It could be during the survey, there were more females at home and they are not working and involved with the study. Among those who are working, only half of them were full-time employees (57.1%) and there was no significant difference in both locations (p=0.714). There are many disadvantages of working as a part-time

employer compared to a full-time employee such as the position is often not held for a long time or not receiving any benefits and will earn less (33). Therefore, there is no guarantee that finances will be more stable. Even half of the respondents were other than a full-time employer, majority of them disagree that they will lose their job within 6 months. Although the inflation in Malaysia in the year 2022 was likely to have peaked at around 4.5% during the quarter, the Malaysian economy expanded by 9.3% in the first three quarters of 2022 (34).

In Malaysia, although the economic structure from agriculture has been transformed to a manufacturing and services sector that has led to urbanization (35), the job description in rural and urban areas are almost the same. There was a significant difference in the job description between urban and rural respondents in this population (<0.001). The majority of the rural respondents were in the farming, fishing and forestry occupation whereas the urban respondents were in the food preparation and serving-related occupation. Due to the cost of living in higher in urban areas, the labour force participation in urban areas is higher (35).

There was no significant difference in household income among the B40 group with hypertension in both locations (p=0.550). In 2019, the median household income in urban Malaysia was significantly higher compared to rural areas (RM8,640 vs RM5,000) (36). It is also related to the job description between urban and rural areas. Therefore, the government should develop the infrastructure in rural areas in creating better employment opportunities (35) such as small-medium enterprises (SME) employment where the participation rates are higher in rural areas (37). Due to several policies implemented by the Malaysian government to improve the well-being of people, the gap between urban and rural income has been reduced (38).

There was around 14% of the respondents in both locations told that there was no more income after deducting taxes. It is more difficult to solve the financial problem because there was only 5.3% were doing a second job and less than 40% of the respondents received regular cash transfers, subsidies or payments through the B40 Malaysia or any other state or NGO benefits in both locations. The Malaysian government has launched many initiatives such as the Health Care Scheme for Group B40 (PeKa B40) to sustain the healthcare needs of low-income groups by focusing on non-communicable diseases (39). This study also found that the percentage of respondents from the rural area received the subsidy or payment for the B40 group compared to respondents in the urban area. The result could be due to less relationship between population, household income, unemployment and low educational status (40).

5. Conclusion

This study provides some comparison of the sociodemographic, job description and income status between respondents from urban and rural areas. Although many studies have been conducted in the comparison between urban and rural respondents in Malaysia show some disadvantages of the rural respondents, however for the B40 group with hypertension there were not so many differences in the respondents in both locations except for the job description. It might be helpful for the government in the formulation the policies to reduce the poverty and assist this population to receive medical treatment to control their hypertension in urban and rural communities. The move was in line with the government's intention to eliminate hardcore poverty by 2025.

Future research could examine the specific needs of both rural and urban B40 groups with hypertension and how the currently prevailing supply meets these needs. Therefore, the government should develop the infrastructure mostly in rural areas to promote foreign direct investment which in turn creates better employment opportunities.

Compliance with ethical standards

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Disclosure of conflict of interest

The authors declare that there is no conflict of interests regarding the publication of this paper.

Statement of ethical approval

Ethical approval was provided by the National Medical Research Register, the Research Ethics Committees at LSHTM (Ref: 12214) and Universiti Teknologi MARA (600-IRMI(5/1/6) REC/313/18). We followed the Ethical Guidelines for good research practice of the Association of Social Anthropologists of the UK and the Commonwealth (ASA) (Association

of Social Anthropologists, 2011). The research protocol addressed key principles set out in Wellcome Trust guidance notes on conducting ethical research involving people in low- and middle-income countries.

Statement of informed consent

Informed consent was obtained from all individual participants included in the study.

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