ASSESSING PROGRESSIVITY OF OUT-OF-POCKET EXPENDITURES FOR HEALTH CARE: EVIDENCE FROM HOUSEHOLDS IN MALAYSIA

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ABSTRACT

**Background:** Out-of-pocket (OOP) payments is a principal means of financing health care throughout both developed and developing countries. Over-reliance on OOP payments may pose an undesirable effect from an equity perspective, where equity in financing is an important policy objective of the health care system.

**Objectives:** To assess the progressivity of OOP payments for health care among Malaysian households.

**Methods:** This paper used cross-sectional nationally representative data derived from the Malaysian Household Expenditure Survey (HES) 2014/15, which comprised of 14,473 households. Progressivity measures deviation from proportionality in the relation between OOP payments and ability to pay (ATP). This paper combined evidence from proportion approach, graphical measures (concentration curve) and summary indices (Gini coefficient, concentration index and Kakwani index) to demonstrate the progressivity of OOP health payments among Malaysian households.

**Result:** More than two-third (77%) of Malaysian households surveyed reported to have made OOP health payments. The average shares of OOP payments from household consumption was 1.65% and was increasing across the household consumption quintiles. The OOP payments distribution was progressive demonstrated by all three approaches. The household consumption and burden of OOP payments was concentrated among the richer populations, with positive Gini coefficient and concentration index. The Kakwani index of OOP payments was 0.0910, indicates mildly progressive OOP payments in Malaysia.

**Conclusion:** The OOP health payments in Malaysia has a progressive distribution. However, reducing progressivity trend should be monitored by the policymakers, and to decide further strategies on policy improvements pertaining to the country’s health financing.

**Keywords:** Progressivity, Out-of-Pocket Expenditures, Health Care, Malaysia
1.0 Introduction

Equity in financing and financial risk protection in healthcare is an important policy objective of the healthcare system (Kutzin, 2008). According to World Health Organization, a concept of fairness in healthcare financing is that healthcare should be financed according to households ability to pay and they should not be burdened by health expenditures to the extent that it reduced their welfare catastrophically (WHO, 2010). Health systems are typically financed through four sources: general taxation, social insurance, private insurance and out-of-pocket (OOP) payments. Previous works on studying financial risk protection has been exclusively focused on OOP payments.

Household OOP health payments is a cost for health care that are paid directly from household’s budget which is not reimbursed by public or private insurance or any third parties at the point of access to health services (WHO, 2009). Sources of health financing such as taxation and health insurance provide some measure of security against the financing risk of ill health, however such protective mechanisms are lacking in OOP payments where payment is required at the point of health service use. In the case of illness, high reliance on OOP payments in financing healthcare exposes households to incur large medical expenses, thus creating health shocks. These shocks could risk households into financial catastrophe, as a consequences of healthcare payments and lost income due to inability to work (Xu et al., 2003).

Malaysia as one of the upper-middle income countries, still has high OOP health expenditure as a fraction of the country’s total health expenditures. As of 2014, 39% of Malaysia’s total health expenditure came from OOP payments (Ministry of Health, 2016), which is high if compared within upper-middle income country standard (31%) and Western Pacific Region (29.5%) (World Health Organization, 2016). It was the second largest source of fund for Malaysian health expenditure, after MOH Malaysia and it was the largest fund for private

Figure 1. Out-of-pocket Health Expenditure as Fraction of Total Health Expenditure, by Country Income Group and WHO Region, 2013. Source: (Adapted from World Health Statistics 2016 (World Health Organization, 2016)
health care, as 82% of Malaysian private health expenditures comes from OOP payments (Ministry of Health, 2016). The comparison of OOP payments shares of total health expenditure in WHO member states with different level of economic development are shown as in Figure 1.

Information on the OOP health expenditure shares of total financing in a country alone do not portray the complete picture of the extent that such payments can jeopardize household welfare. Distribution of OOP health payments which disproportionately fall on poorer households may provide an indication of higher welfare impact on the financial equity. Thus, one of the tools to measure financial equity for health is to measure the progressivity of health payments (Wagstaff, 2008). The extent of inequality in paying for health care services, between households of unequal ability to pay (ATP), is assessed by progressivity. Progressivity measures the deviation from proportionality in the relationship between OOP payment and ATP (Wagstaff, 2008).

The main objective of this paper is to assess the progressivity of OOP health payments among households in Malaysia, in which to highlight the extent of inequality of paying OOP for health services.

2.0 Material and Methods

Data used in this paper are based on a national representative data derived from Malaysian Household Expenditure Survey (HES), 2014/2015, conducted by Department of Statistics Malaysia for a duration of 12 months period. The household is taken as the unit of analysis, with a sample size of 14437 responding households staying in ‘living quarters. Out-of-pocket (OOP) health payments refer to the payments made by households at the point they receive health services and are net of any insurance reimbursement from any third parties e.g. government, insurance company etc. The OOP payments comprise all expenses on health items listed in the HES ranging from purchase of pharmaceuticals, medical goods & appliances, outpatient care such as medical and dental services, as well as hospital or inpatient services.

2.1 Approach Measuring Ability to Pay

Household consumption reported in the survey is used as the measure for household ability to pay (ATP) to measure the household living standards. Household consumption were adjusted, considering the household composition of adults and children, and economies of scale (Xu, 2005). This study used an adult equivalent scale (ei) of:

\[ e_i = (A_i + 0.5K_i)^{0.75} \]

adopted from a similar Malaysian study (Ng, 2012), where Ai is the total number of adults in a household, Ki is the total children in a household and square root of 0.75 was a recommended economies of scale value used in the previous Malaysian study. Each household ATP was quantified by dividing household consumption from the household equivalence scale which estimates the monthly adult equivalent consumption per capita. The formula is as follow:
2.2 Approach Measuring Progressivity of Out-of-Pocket Payments

The equity of OOP payment is frequently assessed by its progressivity. Progressivity assess how closely OOP payment is linked to ATP. If OOP payment account for an increasing (decreasing) proportion of ATP as ATP rises, OOP payment is progressive (regressive), and hence, equitable (inequitable) (Yu, Whynes, & Sach, 2006). There are three main approaches used in empirical studies to assess progressivity of OOP health payments. The first approach was a direct method by assessing the proportion of OOP health payments to household ATP. A progressive distribution is when the household proportion of OOP payments from ATP increases along the household ATP, from the poorer to richer households. A regressive distribution is when the household proportion of OOP payments from ATP decreases along the household ATP, from the richer to poorer households.

Figure 2. A Progressive Concentration curves. Source: Author’s own work

The second approach was demonstrated graphically through the concentration curve (Figure 2). The concentration curve plots the cumulative percentage of OOP payments on the y-axis against the cumulative percentage of population, ranked by ATP starting with the poorest to the richest on the x-axis. A concentration curve for OOP payments which lies above or dominates the line of perfect equality indicates that OOP payments are concentrated among the poorer household. In contrary, a concentration curve for OOP payments that lies below or being dominated by the line of perfect equality indicates that the OOP payments are concentrated among the richer households. Progressivity can be assessed by comparing the position of the Lorenz curve for ATP and the concentration curve for OOP payments. A progressive distribution is when the concentration curve of OOP payments lies below the
Lorenz curve for ATP. In contrast, regressive distribution is when the concentration curve of OOP payments dominates the Lorenz curve for ATP.

From the concentration curves (Figure 2), summary of indices can be generated, namely the Gini coefficient of ATP and concentration index of OOP payments. The Gini coefficient of ATP is defined as twice the area between the Lorenz curve for ATP and the line of perfect equality where the ATP of all persons are equal. The Gini coefficient ranges between 0 to 1, where 1 indicates the entire ATP of a population is concentrated in the hands of the richer persons. The concentration index of OOP payments is calculated by taking twice the area between the concentration curve for OOP payments and the line of perfect equality. The concentration index values range between -1 to 1, where a negative value means that OOP payments were concentrated among the poor, while a positive value indicates otherwise. The value of zero indicates that OOP payments were contributed equally by all person in the population.

The estimation of degree of progressivity can be measured by the third approach using the Kakwani Index (KI) as proposed by (Kakwani, 1977) and extensively used to assess progressivity in health care expenditures (O'donnell, Van Doorslaer, Wagstaff, & Lindelow, 2007). The KI is twice the area between the Lorenz curve for ATP and the concentration curve for OOP payments (O'donnell et al., 2007), marked by green marking as shown in Figure 2. The KI can be defined by the following formula:

$$\text{Kakwani Index (KI)} = 2 \int [ LH(r) - Lx(r)] \, dr = C_H - G_X$$

where $Lx(r)$ is the Lorenz curve for ATP, and $LH(r)$ is the concentration curve for OOP payments, $G_X$ is the Gini coefficient of ATP and $C_H$ is the Concentration index for OOP payments (Figure 2). The values of KI range from -2 (where -2 = -1- $G_X$) in the most regressive distribution, which is when all ATP is in the hands of the richest person and all OOP payments are made by the poorest, to +1 (where +1 = 1- $G_X$) in the most progressive system, which is when ATP is distributed equally and all OOP payments are made by the richest person. The value of zero indicates the OOP health payments are proportional to ATP and the system is considered proportional. Monetary values in this paper are in Ringgit Malaysia (RM) (which RM1 is equivalent to USD0.24). All analysis was analysed using SPSS Statistical Software Version 23 and Microsoft Excel 2016 Version 16.

3.0 Results

Not every household surveyed in HES 2014/2015 have made OOP payments for health care. Table 1 shows the population shares who reported paying for OOP payments. In 2014, 76.56% of Malaysian population reported OOP payments on health. The population shares of OOP payments were progressively increasing along the population consumption quintiles, where the richest 20% of the population have 82.32% shares of OOP health payments, as compared to only 69.93% among the poorest 20%. The 4th, middle, and 2nd quintile have a 79.37%, 77.93% and 73.54% shares of OOP health expenditures respectively.
Table 1. Population Shares with Reported OOP Payments for Health Care, Malaysia 2014/2015

<table>
<thead>
<tr>
<th>Household Consumption Quintiles¹, (n)</th>
<th>Population with reported OOP health payments in HES 2014/2015 (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Poorest 20% quintile (2966)</td>
<td>69.93</td>
</tr>
<tr>
<td>2nd quintile (2895)</td>
<td>73.54</td>
</tr>
<tr>
<td>Middle quintile (2895)</td>
<td>77.93</td>
</tr>
<tr>
<td>4th quintile (2894)</td>
<td>79.37</td>
</tr>
<tr>
<td>Richest 20% quintile (2823)</td>
<td>82.32</td>
</tr>
<tr>
<td>Total population (14473)</td>
<td>76.56</td>
</tr>
</tbody>
</table>

Note: ¹Refers to population quintiles of monthly per capita adult equivalent household consumption (expenditures).

Table 2 shows that the average household consumption and OOP payments steadily increased from poorest to richest household consumption quintiles, both in absolute amounts as well as in proportions of household consumption. In all the household consumption quintiles, the average OOP payments proportions did not exceed 2.0% from the total household consumption, where the proportions of OOP payments at the national level was 1.65%. The proportions of OOP payments were also increasing along the household consumption quintiles.

Table 2. Household Consumption and OOP Health Payments by Household Consumption Quintiles, Malaysia 2014/2015

<table>
<thead>
<tr>
<th>Household Consumption Quintiles¹</th>
<th>Per capita consumption² (RM)</th>
<th>Per capita OOP payments³ (RM)</th>
<th>OOP health payments as % of household consumption</th>
</tr>
</thead>
<tbody>
<tr>
<td>Poorest 20% quintile</td>
<td>536.86</td>
<td>5.55</td>
<td>1.03</td>
</tr>
<tr>
<td>2nd quintile</td>
<td>830.60</td>
<td>10.51</td>
<td>1.27</td>
</tr>
<tr>
<td>Middle quintile</td>
<td>1111.26</td>
<td>16.65</td>
<td>1.50</td>
</tr>
<tr>
<td>4th quintile</td>
<td>1517.49</td>
<td>27.51</td>
<td>1.81</td>
</tr>
<tr>
<td>Richest 20% quintile</td>
<td>2891.77</td>
<td>53.77</td>
<td>1.86</td>
</tr>
<tr>
<td>Total population</td>
<td>1365.93</td>
<td>22.56</td>
<td>1.65</td>
</tr>
</tbody>
</table>

Note: ¹Refers to population quintiles of monthly per capita adult equivalent household consumption (expenditures).
³Refers to monthly per capita adult equivalent household OOP payments for health care

The richest segment of population spent 1.86% of their household consumption on health, whereby the poorest segment only spent 1.03% on health. The average per capita consumption by the richest 20% population were 5 times higher as compared to the poorest 20% of the population. Same pattern was observed on OOP payments, in which OOP payments made by the richest 20% population were almost 10 times higher than that are made by the poorest 20%.
Figure 3. Proportion of OOP Health Payments from the Total Household Consumption by Consumption Quintiles, Malaysia 2014/2015. Source: Author’s own work

Figure 3 illustrate the detail of OOP payments proportions from total household consumption by household consumption quintiles. Based from the proportion approach as shown in Figure 3., the pattern might suggest that OOP health payments in Malaysia for 2014/2015 was progressive in view of increasing proportion OOP health payments across the consumption quintiles.

The progressivity of OOP health payments across the populations is also evident via the second approach; the concentration curves (Figure 4). The concentration curves portray graphically progressive OOP payments, indicated by the position of the concentration curve that lies below the Lorenz curve for ATP. The OOP payments burden were also concentrated among the richer segments of the population as the concentration curves appear below the line of perfect equality. The OOP payments concentration curve also appear to cross and slightly dominate or lie above the Lorenz curve of household consumption at the richest 5% segment of the population, indicating regressive OOP health expenditures among the richest 5% of the population.

Furthermore, the Lorenz curve for ATP lies below the line of perfect equality, indicating that ATP (household consumption) is concentrated among the richer populations (Figure 4). The richest 20% of the population consumed more than half (57.94%) consumptions of the country’s population, whilst the poorest 20% of the population consumed less than 10% (7.72%) of all household consumptions. Similarly, the OOP payments concentration curve is also concentrated among the richer populations, where the richest 20% of the population spent more than half (53.02%) of all OOP payments paid by the country’s population, whilst the poorest 20% spent less than 5% (4.91%) of all OOP payments for health care.
Figure 4. Lorenz and Concentration Curves for Household Consumption and OOP Payments for Health Care, Malaysia 2014/2015. Source: Author’s own work

Quantitatively, the degree of the progressivity of OOP health payments can be estimated by calculating the concentration index of OOP payments and the Gini coefficient of Lorenz curve for ATP, to yield the Kakwani Index for progressivity. The Gini coefficient for ATP and concentration index for OOP payments gives a positive value at 0.3386 and 0.4296 respectively, suggesting that household consumption and OOP payments for health care were concentrated among the richer populations (Table 3). The calculated Kakwani Index is 0.0910, in which the positive value indicates that the OOP payments for health care in Malaysia for 2014 was progressive.

Table 3. Gini Coefficient, Concentration Index and Kakwani Index for Out-of-Pocket Payments for Health Care, Malaysia 2014/2015

<table>
<thead>
<tr>
<th>Household Consumption Quintiles¹</th>
<th>Cumulative population shares (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Household consumption</td>
</tr>
<tr>
<td>Poorest 20% quintile</td>
<td>7.72</td>
</tr>
<tr>
<td>2nd quintile</td>
<td>19.99</td>
</tr>
<tr>
<td>Middle quintile</td>
<td>36.12</td>
</tr>
<tr>
<td>4th quintile</td>
<td>57.94</td>
</tr>
<tr>
<td>Richest 20% quintile</td>
<td>100.00</td>
</tr>
</tbody>
</table>

| Gini coefficient / Concentration Index | 0.3386 | 0.4296 |
| Kakwani Index                       | 0.0910 |

Note: ¹ Refers to population quintiles of monthly per capita adult equivalent household consumption (expenditures).
4.0 Discussion

In 2014/2015, the average OOP payments for health care as a percentage of household consumption in Malaysia was 1.65%. The figure was smaller if compared to other nations in Asia Pacific region (Van Doorslaer et al., 2007). For example, the average shares of OOP health expenditures from household consumption was 4.11% in China, and 5.49% in Vietnam, making these two countries having the highest proportions of OOP payments for health care in Asia Pacific region. Two of high-income countries in Asia Pacific region namely Republic of Korea and Taiwan also noted to have moderately high OOP payments as shares of household consumption at 3.83% and 3.74% respectively. Malaysia’s closest ASEAN neighbour Thailand, Indonesia and the Philippines's proportions of OOP health expenditures from the household consumption was not much difference as compared to Malaysia, although having slightly higher figure at 1.71%, 1.83% and 1.94% respectively.

More than half of the Malaysian population have incurred OOP health payments as shown in the previous study from 1993-2004 (Ng, 2012). As for this study, the results show that in 2014, almost 76.6% of Malaysian households reported paying OOP for health care, which is higher and steadily increasing from the previous years, from 1993 (59.3%) to 1998 (60.5%) and 2004 (68.2%) (Ng, 2012). In terms of OOP payments as shares of household consumption, 1.65% of Malaysian household consumption went to paying OOP for health care, which is higher compared to previous finding by (Ng, 2012) in 2004 (1.13%), 1998 (1.46%) and 1993 (1.41%), as well as finding by (Yu et al., 2006) in 1998 (1.37%). The shares of OOP payments from household consumption were also increase at each level of household quintiles, where since 1993, the proportion of OOPHE from consumption among the poorest 20% of Malaysian household never exceed 1% (Ng, 2012). However, after almost 2 decades in 2014, the figure rises to 1.03%.

Although the concentration of OOP payments has always been concentrated more among the richer Malaysian population, the gap between the richest and poorest household, in terms of difference in OOP payments shares of consumption were also reducing over time from 1.36% in 1993 to 0.83% in 2014. This is supported by the decreasing trend in the concentration indexes for OOP payments over the year from 0.5518 in 1993 to 0.5060 in 1998, to 0.5034 in 2004 (Ng, 2012) and further to 0.4296 in 2014, suggesting that the burden of OOP payments is shifting from the rich to the poorer households over time. The OOP payments shares from household consumption in Malaysia shows a progressive pattern, where the shares increase across household wealth quintiles for all four years from 1993 to 2014. It was supported by a positive Kakwani index for OOP payments across all four years, suggesting that OOP payments are still concentrated among the rich. However, although progressive, the Kakwani indices of OOP payments shows a decreasing trend for the last 2 decades from 1993 to 2014 (Ng, 2012), where in 1993 the Kakwani index was 0.1794, whereby in 2014 it was 0.0910, indicates decreasing progressivity.

Increasing percentage of households incurring OOP payments and shares of household OOP payments from consumption, as well as decreasing trend of OOP payments concentration and Kakwani indices, indicates increasing burden of OOP health payments among poorer households. This can be explained by increasing number of populations using the private health services in the country. Private health services in Malaysia were primarily funded by OOP payments, where 82% of private health expenditure in 2014 came from OOP payments.
(Ministry of Health, 2016). In the space of two decades, significant share of Malaysia’s total health financing was made by private household OOP payments, and the trend has been increasing tremendously by 4-folds over the years, from 4000(RM Million) in 1997 to more than 16000(RM Million) in 2014 (Ministry of Health, 2016).

Furthermore, from 1980 to 2000 the number of private medical facilities in Malaysia have grew by four times from 50 to 224, where the utilization of private inpatient services was more than doubled, while the utilization of private outpatient services has almost tripled (Chee & Barraclough, 2007). For treatment of acute medical problems alone, most of the population (54%) have utilized the private clinic, with 39% going to public facilities, 2% to private hospitals and 5% others (Chee & Barraclough, 2007). Most Malaysian also now have an option to choose to go to private health services of their liking, where private health services are perceived to of better quality, faster waiting time and are highly accessible particularly in urban area (Markit, 2016). Otherwise, Malaysia’s two-tier health care system allows its populations to choose the health care services of preferences, which the better off can opt for more expensive private health services, and the worst off can go for cheaper, yet good and adequate health care services in public facilities, resulting a progressive OOP payments distribution.

4.1 Progressivity of Out-of-Pocket Payments for Health Care: International Comparison

If compared with Malaysia’s regional neighbours such as Indonesia, Malaysia’s OOP payments for health care was more progressive, as compared to Indonesia with a Kakwani index of 0.04 in 2012. However, Indonesia’s main health financing system incorporate a mandatory sets of social health insurance as one of the main funds, which is most progressive in their health financing system with Kakwani index of 0.07 (Trisnantoro, Matthias, & Harbianto, 2014). Other regional neighbours, such as Thailand have a relatively similar progressivity as Malaysia, with a Kakwani index of 0.0907, whereby the Philippines have a higher progressivity with a Kakwani index of 0.1391 (O’donnell et al., 2008). However, the progressivity data for Thailand and Philippines were based from older surveys conducted in 2002 and 1999 respectively. The progressivity of OOP payments for Thailand could be higher in the recent years due to the introduction of mandatory social health insurance scheme back in 2001 (Somkotra & Lagrada, 2008)

Other Asian countries have varied OOP payments progressivity. Most OOP payments in Asian countries are paid more by the better-off, resulting a progressive payment. This is the case especially in the upper middle-income country such as Turkey (Yardim, Cilingiroglu, & Yardim, 2013), Iran (Rezapour et al., 2015) and China (Chen, Zhao, & Si, 2014) and some lower middle-income countries such as the Philippines (O’donnell et al., 2008), where OOP payments are paid according to population’s ATP. However, some lower middle-income countries with big populations such as India (Chowdhury, Gupta, Trivedi, & Prinja, 2018) and Bangladesh (Molla & Chi, 2017), have a regressive OOP payments where the lower income populations, particularly in rural areas spent high proportion of OOP payments due to lack of access to public health care and lack of health protection scheme for the poor (Mondal, 2013), thus exposing the poorer population to risk of financial catastrophe and poverty.
In high income countries, OOP payments tend to be regressive or proportional to ATP such as in Japan, Republic of Korea and Taiwan (O’donnell et al., 2008). This is the case for Republic of Korea as they have an overall regressive health financing system, where the OOP health payments was near proportional or just mildly progressive and social health insurance are regressive. This is due to, regardless of wealth status the population still made high OOP payments as a form of co-payments for expensive health services that are not covered from the mandatory social health insurances (Lee, 2015). Same scenario for other high-income country in Europe, where in Austria, OOP payments was regressive, as co-payment is common especially for expensive medications and health services that are not covered by the insurance(Sanwald & Theurl, 2015). Table 4 shows the Kakwani indices and progressivity of OOP payments for empirical studies done in various countries. From Table 4, most of the high-income countries have a regressive OOP payment, except for Republic of Korea, while most of the upper middle-income countries have a mildly progressive or regressive OOP payments. Low income countries particularly in African region and lower middle-income countries such as India and Bangladesh generally have a regressive OOP payment.

5.0 Conclusion and Recommendation

As a conclusion, the OOP payments for health care in Malaysia has a progressive distribution and average OOP payments made by household are relatively small, especially among the poorer households. Progressive OOP payments was partly contributed by Malaysia’s two-tier healthcare system, where the populations regardless of differing wealth have an option to go to more costly private health facilities or utilising the more affordable public health services. The shares and progressivity of household OOP payments in Malaysia was relatively small, compared to other regional countries with same economic background, as well as to some of the more economically stronger countries.
Table 4. Empirical Studies on Progressivity of Out-of-Pocket Payments for Health Care

<table>
<thead>
<tr>
<th>Authors</th>
<th>Countries</th>
<th>Kakwani index of OOP Payments</th>
<th>Progressivity of OOP Payments</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Yu et al., 2006)</td>
<td>Malaysia</td>
<td>0.0093</td>
<td>Mildly progressive</td>
</tr>
<tr>
<td>(O’donnell et al., 2008)</td>
<td>13 Asian Countries</td>
<td>Varies</td>
<td>Varies</td>
</tr>
<tr>
<td>(Ng, 2012)</td>
<td>Malaysia</td>
<td>0.1328</td>
<td>Progressive</td>
</tr>
<tr>
<td>(Munge &amp; Briggs, 2013)</td>
<td>Kenya</td>
<td>-0.31</td>
<td>Regressive</td>
</tr>
<tr>
<td>(Mondal, 2013)</td>
<td>India</td>
<td>-0.23</td>
<td>Regressive</td>
</tr>
<tr>
<td>(Yardim et al., 2013)</td>
<td>Turkey</td>
<td>-0.028</td>
<td>Mildly regressive</td>
</tr>
<tr>
<td>(Chen et al., 2014)</td>
<td>China</td>
<td>0.040</td>
<td>Mildly progressive</td>
</tr>
<tr>
<td>(McIntyre, Doherty, &amp; Ataguba, 2014)</td>
<td>South Africa</td>
<td>-0.04</td>
<td>Mildly regressive</td>
</tr>
<tr>
<td>(Trisnantoro et al., 2014)</td>
<td>Indonesia</td>
<td>0.04</td>
<td>Mildly progressive</td>
</tr>
<tr>
<td>(Lee, 2015)</td>
<td>South Korea</td>
<td>0.01</td>
<td>Mildly progressive</td>
</tr>
<tr>
<td>(Guerrero, Prada, Pérez, Duarte, &amp; Aguirre, 2015)</td>
<td>Colombia</td>
<td>0.03</td>
<td>Mildly progressive</td>
</tr>
<tr>
<td>(Malik, 2015)</td>
<td>Pakistan</td>
<td>-0.013</td>
<td>Mildly regressive</td>
</tr>
<tr>
<td>(Sanwald &amp; Theurl, 2015)</td>
<td>Austria</td>
<td>-0.107</td>
<td>Regressive</td>
</tr>
<tr>
<td>(Rezapour et al., 2015)</td>
<td>Iran</td>
<td>0.091</td>
<td>Mildly progressive</td>
</tr>
<tr>
<td>(Molla &amp; Chi, 2017)</td>
<td>Bangladesh</td>
<td>-0.201</td>
<td>Regressive</td>
</tr>
<tr>
<td>(Edmonds, 2018)</td>
<td>Canada</td>
<td>-0.225</td>
<td>Regressive</td>
</tr>
<tr>
<td>(Klavus &amp; Rissanen, 2018)</td>
<td>Finland</td>
<td>-0.222</td>
<td>Regressive</td>
</tr>
<tr>
<td>(Chowdhury et al., 2018)</td>
<td>India</td>
<td>-0.352</td>
<td>Regressive</td>
</tr>
</tbody>
</table>
However, if compared with the previous Malaysian studies, the trend of progressivity of OOP payments was in decreasing trend over time. This worrying trend should be alarmed and to be closely monitored by the policymakers. Findings from this paper can give an insight to policymakers on the current situation of the country’s OOP payments for health care, and based on it, can decide further strategies on policy improvements to cater the health need of Malaysian households accordingly, especially prioritising to minimise the OOP spending by the vulnerable pocket of populations such as the poor.

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Declaration

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Authors contribution

Author 1: Carried out the research, compiled, analysed and interpreted the data, and prepared draft of manuscript

Author 2: Supervised the research and final manuscript editing

Author 3: Supervised the research and manuscript editing
References


