Original Research

FACTORS AFFECTING INDONESIAN PUBLIC HEALTH CENTERS' HEALTH WORKERS' INCOME ADEQUACY

Faktor yang Memengaruhi Kecukupan Pendapatan Tenaga Kesehatan Puskesmas di Indonesia

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Abstract

Background: Dissatisfaction, additional work, and desired compensation are related to the needs and perceptions of civil servant health workers to increase their income. However, the probability and influencing factors regarding the income adequacy of civil servant health workers in Indonesia are still unknown.
Aims: to find out the factors related to the income adequacy of health workers.
Methods: This is an observational study with a cross-sectional design using data from the Employment Research in the Health Sector (RISNAKES) 2017 in Public Health Centers in Indonesia. Probit analysis was conducted to assess the probability of income adequacy.
Results: A total of 963 respondents were analyzed. The study found that changes in each variable including income, official residence facilities, training facilities/ seminars/ training, motivation, and job satisfaction of a unit would increase the probability of income adequacy ranging from 2% - 81%, except for the age variable. By referring to high job satisfaction of > 75% and taking into account the probability of 80%, the presumed adequate income is no less than IDR 28,800,000.
Conclusion: The probability of the monthly income adequacy of civil servants in the health sector is influenced by job satisfaction, ability to save, official residence facilities, facilities to attend seminars, age, and amount of income. Increasing and reformulating the amount of income must be done to optimize the performance and productivity of health workers.

Keywords: health workers, income adequacy, public health center, saving

Abstrak

Latar Belakang: *Ketidakpuasan, pekerjaan tambahan, kompensasi yang diinginkan berhubungan dengan kebutuhan dan persepsi bagi tenaga kesehatan PNS untuk meningkatkan pendapatannya. Seberapa besar kemungkinan kecukupan pendapatan pegawai pemerintah tenaga kesehatan di Indonesia masih belum diketahui, termasuk faktor-faktor yang mempengaruhinya.*
Tujuan: *Untuk mengetahui faktor-faktor yang berhubungan dengan kecukupan pendapatan tenaga kesehatan di Puskesmas.*
Metode: *Desain penelitian ini adalah observasional dengan jenis potong lintang, menggunakan data dari Riset Ketenagaan di bidang Kesehatan (RISNAKES) 2017 di Indonesia pada Puskesmas. Analisis probit dilakukan untuk menilai probabilitas kecukupan pendapatan.*
Hasil: *Sebanyak 963 responden dianalisis dan ditemukan bahwa terjadi perubahan pada setiap pendapatan, fasilitas perumahan dinas, fasilitas pelatihan/ seminar/ pelatihan, motivasi, kepuasan kerja satu unit akan meningkatkan kemungkinan kecukupan pendapatan berkisar antara 2% - 81%, sebaliknya berbeda untuk variabel usia. Dengan mengacu pada kepuasan kerja yang tinggi > 75% dan dengan memperhitungkan probabilitas 80% maka penghasilan yang disebut cukup adalah lebih dari Rp.28.800.000.*
Kesimpulan: *Probabilitas kecukupan pendapatan bulanan PNS bidang kesehatan dipengaruhi oleh kepuasan kerja, kemampuan menabung, fasilitas rumah dinas, dan fasilitas menghadiri seminar, usia, dan jumlah pendapatan. Peningkatan dan perumusan ulang besaran pendapatan harus dilakukan untuk mengoptimalkan kinerja dan produktivitas tenaga kesehatan.*

Kata kunci*: kecukupan pendapatan, puskesmas, tabungan, tenaga kesehatan,*

Introduction

Health workers are the driving force to achieve health programs in healthcare facilities. The World Health Organization (WHO) has devised various strategies to optimize the performance and productivity of health workers as human resources for health services in the era of National Health Insurance (Cometto and Dussault, 2020). In this strategy, strengthening health workers is carried out in various aspects, especially in creating an ideal work environment to increase motivation, job satisfaction, and retention, where one approach relates to the provision of compensation. Thus, it is expected that health service facilities as an organization shall be able to carry out their duties to meet the health targets given by the policymakers.

Compensation is a monetary value for work performed by workers provided by the organization and it is given based on agreements and adjusted to the capabilities of the organization (Conte and Landy, 2018). Various components such as basic salaries and bonuses are important parts of compensation in the form of financial and non-financial matters (Bussin and Diez, 2021; Rose, 2022). The amount of shared salary financial benefits and incentives are the value of income to make ends meet, while the non-financial is a guarantee of various expected comfort measures (Bussin and Diez, 2021). The compensation explains that this reward can affect the response of satisfaction or vice versa for what is obtained. This is due to a process of comparing what they obtained with what other people obtained based on the same job, whether they are satisfied or not regarding their income (Bussin and Diez, 2021).

Health workers' incomes are given according to their competencies and years of service. Salaries, benefits, and financial incentives illustrate how much income individuals work both as government or private employees. Health workers who are civil servants have relatively the same salary, but they usually receive additional benefits or incentives every month. The same goes for civil servant health workers in health services such as Public Health Centers (PHCs) in Indonesia. The amount of benefits and incentives in Indonesia varies because payments depend on the ability of local governments, fiscal, inflation, and political will of the policyholder.

The income adequacy of Indonesian health workers, especially civil servants (PNS) in PHCs is often questionable. Dissatisfaction often occurs with the obtained salary, research at Regional Hospitals concluded that there is dissatisfaction among doctors whose salaries are 6 million and above (Mulyana, Zulfendri and Aulia, 2019). As for nurses, they still do additional work to increase their income, thus it shows that there is still a lack of compensation from their workplace (Purwandari *et al.*, 2021). What is the ideal income that must be given by following the needs and perceptions of health workers to meet the desired compensation based on work performance? Whether today their compensation can be declared adequate? Then whether the income adequacy is only determined by the amount of income? Adequacy is a perception that can vary for various reasons. Adequacy is important to secure and make employees give their best performance to work at an organization (Adeoye, 2019; Muruga, 2019; Rose, 2022).

The probability of the income adequacy of civil servant health workers in Indonesia is still unknown, as well as the factors that influence it. There is no certainty on the ideal number to prove and the factors that play a role in determining income adequacy. This question is needed to support the policy strategy of providing adequate and appropriate income for civil servant health workers to achieve health targets in Indonesia. Based on this reason, the purpose of this paper is to find out the factors related to the income adequacy of health workers in PHCs.

Method

The research design is an observational study with a cross-sectional design, using secondary data from the Employment Research in the Health Sector (RISNAKES) 2017 in PHCs as Public

Health Centers in Indonesia (Indonesian Ministry of Health, 2018). The population of this study was health workers in PHCs who participated in the RISNAKES 2017, with a sample of civil servants following the research time. The research criteria were civil servants who had worked for at least 6 months in the selected health centers.

The process of collecting data from RISNAKES 2017 began with the process of doing consent, observation, collecting interview data, and self-questionnaire. Observations were made by trained independent enumerators. Respondents were selected by grouping the types of health workers, then one person from each group was chosen randomly.

The dependent variable was income adequacy within 1 month (1 = yes, 0 = no). Some independent variables were composite data such as motivation and job satisfaction (Likert scale) as measured by a standard questionnaire. The productivity variable was calculated based on productive time which fulfills 80% of work time (<100% = not fulfilled; ≥100% = fulfilled). Furthermore, the income variable was the sum of the salary and incentive obtained.

Univariate data analysis was performed to obtain respondent characteristics. Single probit analysis was performed to select the independent variables that entered the final probit analysis, i.e. variables with $p < 0.05$. Then, probit analysis was performed on all selected variables so that the final model which was assessed by the hypothesis (H0) model was rejected if $P < 0.05$ with the Chi2 (Goodness of fit) test. To assess whether the model is good, the McFadden test was carried out around 0.2 - 0.4, then a marginal test was conducted to assess the probability of the independent variable on the dependent variable. The analysis test was performed with STATA software version 16.

Result and Discussion

A total of 963 respondents were analyzed based on the completeness of the time study research data with the characteristics described in Table 1. The

authors found eight (8) variables that could be included in the multiple probit test ($p < 0.05$).

Based on the simultaneous Probit test results, all eight variables were obtained with significant test results ($p < 0.05$) (Table 2). The results of the study found that changes of one unit in each income, official residence facilities, training/ seminar/ training facilities, motivation, and job satisfaction would increase the probability of adequate income (Table 2). Furthermore, changing one unit of age would reduce the probability of the adequacy of income.

In addition, the above model gets a probability prediction of around 56.2%, and this probit model can correctly predict 76.5%. The Goodness of fit test was conducted with the value of prb>chi2 = 0.234, so this model can be accepted, supported by the McFadden test = 0.247, which means the regression line was able to explain the variation of the dependent distribution. If we pay attention to the adequacy of income in a month, the results of this study refer to high satisfaction above 0.75. In conclusion, the income that is considered adequate is more than Rp. 28,800,000 per month (Figure 1).

The probability of the monthly income adequacy of civil servant health workers in Indonesia depends on regulation to provide the ideal work environment from PHC management. The results of this study found that job satisfaction was a variable that has the role of increasing the highest probability of earning income. The work environment is related to how job satisfaction is formed which is related to the psychology of the worker or the attitude or tendency at work, influencing their motivation and happiness (Akhtar *et al.*, 2018; Arnold *et al.*, 2020), when referring to work satisfaction theory, job satisfaction is closer to individual response or work personality (Pancasila, Haryono and Sulistyo, 2020). Research studies in other countries showed that many strategies can stimulate job satisfaction of health workers such as the ability to manage stresses at work relating to the organization by creating a strategy that can help health workers to adapt their work (Doki,

Sasahara and Matsuzaki, 2018), be able to encourage health workers to be more efficient in services related with the leadership (Głód, 2018; Asgari, Mezginejad and Taherpour, 2020). Furthermore, the other ideal work environment that can support them includes salary (Marija, Andreja and Sandra, 2020), supervision from supervisors (Davidescu, Apostu and Paul, 2020; Marija, Andreja and Sandra, 2020), promotion (Asgari, Mezginejad and Taherpour, 2020), and pursuing higher education (Arifin, 2018).
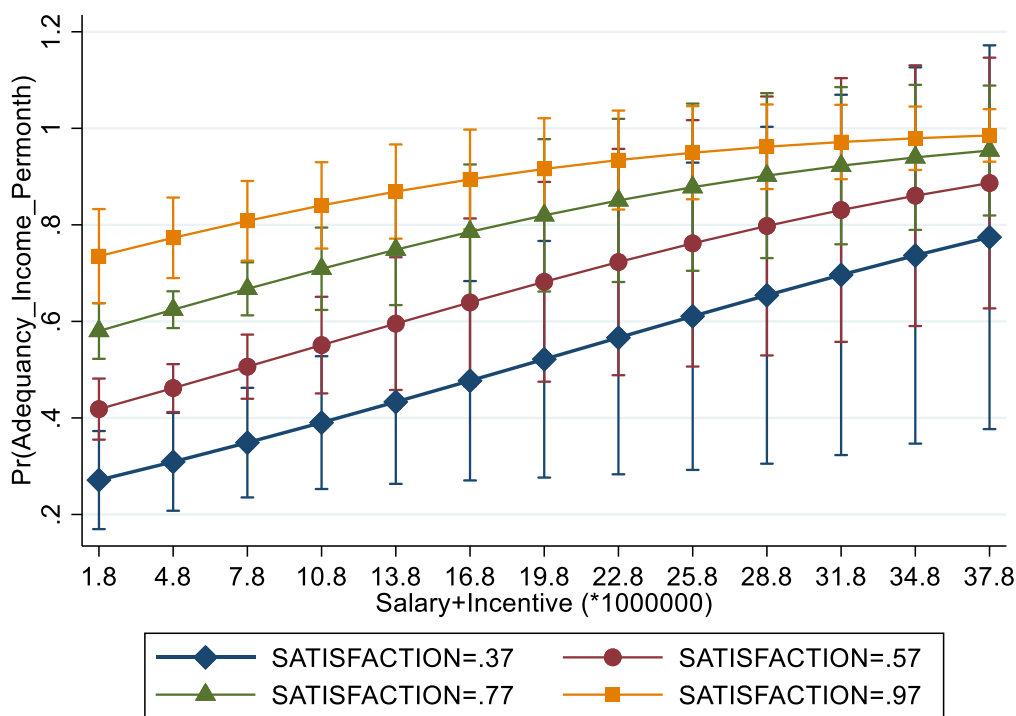
Table 1. Characteristics of research respondents

Variable (N=963)	Mean	SD	Min	Max	P value*
Income Adequate	0.56	0.50	0	1	-
Productivity of health workers	0.83	0.27	0.04	1.5	0.015
Gender	0.21	0.40	0	1	0.680
Saving	0.41	0.49	0	1	0.000
Official residence facilities	0.13	0.33	0	1	0.026
Facilitated training / seminars / training	0.61	0.49	0	1	0.000
Get further education facilities	0.12	0.33	0	1	0.409
Married Status	0.06	0.24	0	1	0.929
Types of Health Workers	1.88	0.70	1	3	0.224
Age group	0.49	0.50	0	1	0.001
The region	0.42	0.49	0	1	0.000
Motivation	0.74	0.06	0.46	0.97	0.000
Job satisfaction	0.70	0.08	0.37	1	0.000
Duration of Work at the Health Center	9.50	7.02	0	35	0.593
Earnings (* 1000000)	5.05	2.65	1.8	38.8	0.000
Total liabilities	1.81	1.14	0	6	0.001

*P value Probit: a single probit test for each independent variable to be tested

Table 2. Results of probit analysis

Variable	Koef	SE Robust	dy/dx	p	95%CI (dy/dx) Min	Max
Productivity of health workers	0.06	0.095	0.02	0.507	-0.04	0.07
Saving	1.48	0.10	0.48	0.000	0.43	0.54
Official residence facilities	0.32	0.15	0.09	0.03	0.01	0.17
Facilitated training / seminars / training	0.30	0.10	0.08	0.002	0.03	0.14
Age	-0.25	0.1	-0.07	0.013	-0.13	-0.02
The region	0.13	0.10	0.04	0.209	-0.02	0.9
Motivation	-0.39	0.95	-0.11	0.683	-0.64	0.42
Job satisfaction	2.89	0.60	0.81	0.000	0.49	1.00
Salary (* 1000000)	0.06	0.02	0.02	0.020	0.003	0.03
Total liabilities	-0.06	0.04	-0.02	0.146	-0.04	0.01
Constanta	-2.45	0.71				
Pseudo R2	0.2711					
Prob> Chi2	0.000					

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Source: Indonesian Ministry of Health, (2018)
Figure 1. Probability of PHC Health Workers' by income and job satisfaction

The results of this study found several factors that play a role in job satisfaction that becomes an important part to increase the probability of income adequacy. Perception of income adequacy is certainly related to the ability to make ends meet, including being able to set aside income for saving. Saving is an important part of human life. It can answer questions such as how much of your income can be saved, what risks must be borne, how to invest from what you have, and whether to buy something in the future (Bussin and Diez, 2021). With various increasing economic needs, saving becomes an inseparable part to ensure the future of health workers. Based on this study, the probability of a sufficient income of around 48% (Table 2) due to the addition of 1 unit can be saved, showing that health workers still need financial certainty for their future, even though, as civil servants, they will receive salary until their retirement. On the other hand, many employees tend to be consumptive in Indonesia (Arifin, 2018).

In this study, the existence of official residence ownership facilities or seminars is related to the adequacy of the income of health workers. The official residence is related to the ownership and comfort of health workers, which causes them not to have to think about funding, and stimulates retention of the workers (World Health Organization Regional Office for Africa, 2020; Bussin and Diez, 2021b). While funding for attending seminars is needed to elevate the workers' knowledge and boost their confidence (Arifin, 2018; Mulyana, Zulfendri and Aulia, 2019; Marija, Andreja and Sandra, 2020) and external motivation, therefore health workers no longer need to incur additional costs. However, the results of the study found that in the age group of > 38.8 years, the probability of decreasing income adequacy was more common (marginal analysis < 38.8 years vs. > 38.8 years, the probability was 59.8% compared to 52.7% with p = 0.000). The results are quite interesting because job satisfaction should increase along with the age variable, but based on the questionnaire related to job satisfaction, the result was

different. This condition could be related to changes in priorities and motivation, including worries about insufficient income (Cavanagh, Kraiger and Henry, 2020).

The results of this study inform that the amount of salaries only provides the lowest probability of income adequacy. As is well-known, salary is a reward or compensation for all the work done, but if the amount is improper, it will reduce job satisfaction. The compensation will result in a job performance that the organization needs from employees and will increase job satisfaction which is the key to describing financial satisfaction, ability to meet the needs of life, self-actualization, self-esteem, valuable experience, workers' perception of their contribution to the organization, and comparison with others in the same job (Sessa and Bowling, 2021). Thus, although it seems only to provide a low probability, large salaries still play an important role in income adequacy. The results of this study are in line with the mentioned theories. Those workers who have high job satisfaction tend to have higher incomes so they have a perception of having sufficient income (Figure 1). However, it is also possible that unsatisfactory conditions among workers can be caused by other factors, such as those obtained from the results of this study, plus other factors such as social support, family conflict, human relation, working condition, and physical health (Deng *et al.*, 2018; Kowitlawkul *et al.*, 2018; Bello, Adewole and Afolabi, 2020; Sessa and Bowling, 2021).

The probability of salary per month based on job satisfaction is a classic question from various parties. Based on the results of this study, it was found that the expected salary was 28 million with a note that job satisfaction was > 75%, with a probability of about 80%. These results indicate we need to increase income, especially in low-income areas, whatever the challenge, like fiscal problems, low inflation, and other economic problems. However, the results of this study confirm that efforts to increase salaries need to be carried out because they are related to job satisfaction to achieve the optimization of the performance and productivity of health workers. Moreover, it is hoped that the health program can run as expected.

The results showed that time productivity did not significantly affect the income adequacy of health workers. It is known that productivity is related to the target achieved, while income adequacy is a form of compensation for what has been done according to their perception. The conditions in which the time productivity was not related to the adequacy of income could be assessed: first, productivity at PHCs was assessed only as a final annual target, not a target for health workers. Second, salaries in Indonesia did not include time productivity as part of the calculation, if the final target is the only aspect to be taken into account, it can lead to dissatisfaction among workers at PHCs (Indonesian Government Regulation Number 36 of 2021 concerning Wages), early identification is needed by policymakers to determine the right strategy for linking time productivity and income adequacy.

Regions also do not show a role in influencing the income adequacy of health workers. Civil Servant (PNS) health workers both in Java and outside Java Island still feel deprived if their income does not meet expectations. Moreover, there is an imbalance in the distribution of health workers and different incomes with regions in Java whose economy is better than other regions. If the problem persists, the adequacy of income will return to their respective perceptions. Expectancy theory explains that every worker expects results based on expectations (Rose, 2022). Wherever they work, they would still respond "insufficient" if the income is deemed improper.

This research has implications for strategies to improve job satisfaction and health workers' income. To be able to make it ensue is not an easy matter. The challenges that must be overcome are the ability of countries and regions to increase health workers' income and the management's optimal efforts in providing an ideal work environment for workers. Therefore, an ideal model is essential as a strategy that can realize the required income while at the same time realizing the

desired job satisfaction. The model can be developed to measure the ideal amount of income adequacy from the amount of income and job satisfaction and other factors that have an important role in increasing the probability of adequacy. In addition, another implication is that the government must pay attention to the income adequacy of workers in the health service system, especially in the era of health insurance, in which health workers experienced many complaints related to income issues. With the national health insurance scheme now in place and data collection taking place in 2017, it can be assessed that there are still many health workers with low-income adequacy probabilities due to job satisfaction and low income. Through the results of this research, it is hoped that the central and regional governments will consider providing intensive assistance to all health workers without focusing only on the type of work or other factors. Furthermore, it is also necessary to pay attention to all the determinants that influence ensuring the optimization of the sustainability of the national health insurance system.

The limitation of this study is that it is a cross-sectional study, so it cannot measure cause and effect. However, this study's results can explain a relationship between the probability of sufficiency and the various factors that play a role. Another limitation is that there is no information on the expenditure of health workers, so it was challenging to calculate the ideal adequacy in terms of income and expenditure. However, from the information regarding income, the probability of adequacy can be assessed with a certain income.

Conclusion

The conclusion of this study was the probability of the adequacy of income of health workers per month in public health centers in Indonesia is IDR 28,800,000 and is influenced by job satisfaction, ability to set aside income, official residence facilities, facility for attending seminars, age, and salary. Based on the results of the study, it is expected that in preparing the amount of income, policymakers must

assess the level of patient satisfaction so that income adequacy can be met. The development of models to calculate the amount of income needed is based on the variables that are present.

Abbreviations

RISNAKES: *Riset Ketenagaan di Bidang Kesehatan* (Employment Research in Health Sector); WHO: World Health Organization; Puskesmas (PHC): *Pusat Kesehatan Masyarakat* (Public Health Center); PNS: *Pegawai Negeri Sipil* (civil servants), SE: Standard Error; CI: Confident Interval.

Declarations

Ethics Approval and Consent Participant
The research ethics of RISNAKES were obtained from the Ethics Commission of the Health Research and Development Agency, Ministry of Health of the Republic of Indonesia. Respondents were addressed before the survey regarding the survey's objectives and purposes, and verbal consent to participate in the study was taken from them.

Conflict of Interest
The authors declare that there are no significant competing financial, professional, or personal interests that might have affected the performance.

Availability of Data and Materials
The datasets are available from the corresponding author but need permission from the management Data of the Ministry of Health of the Republic of Indonesia.

Authors' Contribution
ARH: Main Contributor, Original, Concept, develop and discuss ideas; data management, data analysis, data interpretation; manuscript writing. JI, HH, and AB: Develop and discuss ideas, interpret data, and provide advice and policies that can be recommended.

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