Preventia: The Indonesian Journal of Public Health
ISSN: 2528-2999 (Print): 2528-3006 (Online)
DOI: 10.17977/um044v10i12025p79-88

Exploring Job Preferences among Final-Year Undergraduate Public Health Students in Indonesia

Dian Mawarni*[1], Nurhasmadiar Nandini[2], Anindya Hapsari[1], Tika Dwi Tama[1], Mika Vernicia Humairo[1]

[1]Universitas Negeri Malang, Jl. Semarang No. 5, Malang, East Java, 65145, Indonesia
[2]Universitas Diponegoro, Jl. Prof. Jacub Rais Tembalang, Semarang, Central Java, 50275, Indonesia
*Authors correspondence, Email address: dian.mawarni.fik@um.ac.id

ARTICLE INFO

ORCHID ID
Author 1: https://orcid.org/0000-0002-0341-1302
Author 2: https://orcid.org/0000-0002-3241-8669
Author 3: https://orcid.org/0000-0003-2663-8232
Author 4: https://orcid.org/0000-0003-4963-8243
Author 5: https://orcid.org/0000-0001-6513-0744

Article History:
Paperreceived: 23-07-2024
revised: 28-06-2025
accepted: 29-06-2025

Keywords:
Job preferences; health workers; public health; students.

ABSTRACT

Although the number of public health graduates has rapidly increased, public health workforce scarcity remains challenging in Indonesia. Understanding job preferences among students majoring in health is essential for health workers in the future. The purpose of this study is to investigate undergraduate public health students' stated preferences when choosing a workplace and occupations after graduation and to explore factors that are related to choices of employment. An online survey was carried out in June 2023. Respondents were asked questions that collected sociodemographic and academic characteristics and information related to their preferred workplace and occupation. Descriptive statistics were measured using frequencies and proportions, and analytic statistics were performed using the Chi-Square test. An alpha level of 0.05 was employed to determine significance. A total of 275 undergraduate public health students completed the questionnaire. Over fifty percent preferred government health agency as workplaces and public health professionals as occupations. Significant factors related to job preferences were categorized into individual characteristics and academic background. These findings predict the public health workforce shortages due to public health graduates experiencing difficulties finding jobs and entering work in government settings, so some decide to work outside the government.

1. Introduction

The public health workforce plays a vital role in ensuring the delivery of essential services and improving population health (Yeager, Wisniewski, et al., 2016). In response to increasing health challenges and the need for stronger public health systems, universities have rapidly expanded undergraduate programs in public health, resulting in a growing number of graduates each year (Holsinger et al., 2015; Koblinsky et al., 2015). In Indonesia, this growth is reflected in the existence of 174 Bachelor of Public Health programs across public and private universities (Lembaga Akreditasi Mandiri Perguruan Tinggi Kesehatan Indonesia, n.d.). However, despite this increase in educational capacity, many regions still experience shortages and uneven distribution of public health workers, particularly in governmental health agencies (Harahap, 2019; Mawarni & Sabran, 2022). This mismatch between graduate output and workforce absorption highlights the need to better understand the factors influencing graduates' transition into employment (Yeager, Beitsch, et al., 2016).

In this context, students' job preferences are increasingly recognized as a key determinant of workforce availability and distribution. Their career choices shape the flow of health professionals into different sectors and regions, influencing the equity and effectiveness of public health service delivery (Bao & Huang, 2021). While institutions have an important role in preparing students to meet workforce needs, aligning educational outcomes with student preferences is essential to ensure sustainable workforce planning (Krasna et al., 2021).

Previous studies have explored job preferences among students from other health disciplines such as medicine (S. Liu et al., 2018), dentistry (Hoyte et al., 2021), midwifery (Goemaes et al., 2019), nursing (T. Liu et al., 2019), and pharmacy (P. Liu et al., 2021). Despite the growing number of public health graduates, no studies have systematically explored job preferences among undergraduate public health students in Indonesia. This represents a critical gap, as their preferences may influence future workforce distribution and policy decisions. Addressing this gap, the present study aims to explore the job preferences of final-year undergraduate public health students in Indonesia and identify the sociodemographic and academic factors that may influence their choices of workplace and occupation.

2. Method

2.1 Study Design and Participants

An online survey was conducted to reach respondents across regions in Indonesia. Participants were eligible if they were active students majoring in Bachelor of Public Health Sciences from the classes of 2019 and 2020 and willing to be study participants. Participants voluntarily participated in this study.

2.2 Study Tools

The questionnaire was created on Google Forms to collect the data. The questionnaire consisted of two main sections. The first section collected sociodemographic and academic information, including age, gender, ethnicity, place of origin, marital-parental status, family income, parental occupation, university location and type, and public health specialty. The second section focused on job preferences, asking respondents to indicate their preferred type of workplace (e.g., healthcare facility, government health agency, Non-Governmental Organization, company) and preferred occupation (e.g., public health professionals, academics, consultant, social worker). The question formats were multiple-choice and closed-ended. The questionnaire could be easily accessed on any device with an internet connection by clicking the link survey. The questionnaire was constructed by the researchers and was reviewed by two experts from the fields of health policy and management to assess content validity. The reliability of the questionnaire item was based on a pilot study that included 30 respondents, and the reliability was examined using Cronbach's alpha test.

2.3 Data Collection Procedures

An online survey was generated over 20 days (5th to 30th June 2023). The survey link was disseminated primarily through WhatsApp groups of public health student cohorts and academic networks. In addition to direct student group messaging, the link was also distributed via public health lecturer associations and university mailing lists to encourage

wider participation. Efforts were made to reach respondents from various geographical regions and institutional backgrounds by involving lecturers from multiple universities, including those located outside Java Island and in rural provinces. This approach aimed to enhance the diversity of the sample and capture a broader perspective from final-year public health students across Indonesia. An email address was required for each time respondents submitted their responses to prevent duplication. On average, respondents took 5 minutes to complete the questionnaire.

2.4 Data Processing and Analysis

Data collected from the online survey were directly saved in Google Spreadsheets and converted to Microsoft Excel. Data were double-checked, cleaned, and coded prior to analysis. Both descriptive and inferential statistics were conducted in this study. The characteristics of respondents, workplace, and occupation were tabulated as numbers and percentages. Data was examined statistically through the Chi-Square test with an alpha of 0.05 using STATA.

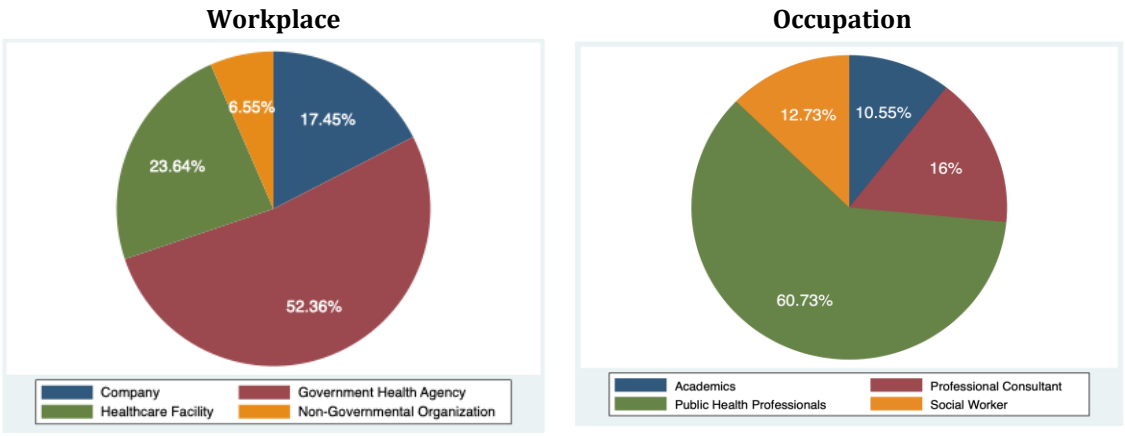
2.5 Ethical Statement

This study received approvals from The State Polytechnic of Health Malang (Reference number: 713/VII/KEPKPOLKESMA/2023). All respondents provided informed consent online before commencing the survey.

3. Result and Discussion

3.1 Characteristics of the Respondents

A total of 275 respondents have submitted their responses. Most of the respondents were 21 years and over (218, 79.27%). The female respondents (250) were ten times that of male respondents (25). More than half of the respondents were not Javanese (162, 58.91%), came from rural areas (156, 56.73%), and had family income more than the regional minimum wage (153, 55.64%). Most of the respondents had an intact family (215, 78.18%). The majority of those surveyed do not have parents who work as health workers (260, 94.55%). Additionally, a large proportion of respondents had a public health specialty in health policy and administration (82, 29.82%), studied at universities outside Java Island (154, 56%), and were enrolled in public universities (141, 51.27%). Figure 1 show about respondents preferred workplace and occupation.



Source: Primary Data, 2023

Figure 1. Respondents' Preferred Workplace and Occupation

3.2 Preferred Workplace and Occupation

Figure 1 shows the workplace and occupation that were preferred by respondents. Workplaces were rearranged into four categories: (i) healthcare facility; (ii) government health agency; (iii) non-governmental organization; and (iv) company. Healthcare facilities were clinics, public health centers, and hospitals. Government health agencies encompass the health ministry (national), health department (district/city), and health insurance boards. At the time of data collection, government health agency (144, 52.36%) was the most chosen by respondents, followed by healthcare facility (65, 23.64%), company (48, 17.45%), and non-government organization (18, 6.56%). Occupations were recoded into four categories: (i) public health professionals; (ii) academics; (iii) professional consultants; and (iv) social workers. Public health professionals included epidemiologists, health administrators, health promotion specialists, health safety officers, and sanitarians. Academics involved lecturers and researchers. Professional consultants such as public health advisers and data analyst experts. Meanwhile, social workers consisted of a community project manager and a volunteer. From this survey, the highest respondents were interested in public health professionals (167, 60.73%), followed by professional consultants (44, 16%), social workers (35, 12.73%), and academics (19, 10.55%).

3.3 Determinant Factors of Preferred Workplace and Occupation

The quantitative analysis further identifies factors related to workplace and occupation preferences among undergraduate public health students. This study investigates the relationship between the subjects' background and workplace and occupation preferences. As shown in Table 1, the percentage of respondents who favored the government health agency as a future place to work was more significant in Javanese ethnicity than in those who were not Javanese (55.75% versus 50.00%; $p = 0.01$); the number of respondents favoring the government health agency as a future place to work was more significant in families who have more than the regional minimum wage, as compared with those who have less than the regional minimum wage (54.90% versus 49.18%; $p = 0.01$); sixty-one percent of respondents who choose public health specialty in health and policy administration answered favorably for the government health agency as a future workplace, compared to those from other specialties

(p = 0.00); the percentage of respondents favoring the government health agency as a future place to work was significantly from a university located on Java Island, as compared with those who studied at a university outside Java Island (53.72% versus 51.30%; p = 0.02); the number of respondents who favored the government health agency as a future place to work was significantly greater in public university than in those who were private university (55.32% versus 49.25%; p = 0.01).

Table 1. Characteristics of Respondents by Preferred Workplace Category

Characteristics	Preferred Workplace Category				P-value
	Healthcare Facility	Government Health Agency	Non-Governmental Organization	Company	
Age (years)					0.85
20 and less	12 (21.05)	29 (50.88)	4 (7.02)	12 (21.05)	
21 and over	53 (24.31)	115 (52.75)	14 (6.42)	36 (16.51)	
Total	65 (23.64)	144 (52.36)	18 (6.55)	48 (17.45)	
Gender					0.78
Female	60 (24.00)	132 (52.80)	16 (6.40)	42 (16.80)	
Male	5 (20.00)	12 (48.00)	2 (8.00)	6 (24.00)	
Total	65 (23.64)	144 (52.36)	18 (6.55)	48 (17.45)	
Ethnicity					0.01
Javanese	16 (14.16)	63 (55.75)	10 (8.85)	24 (21.24)	
Not Javanese	49 (30.25)	81 (50.00)	8 (4.94)	24 (14.81)	
Total	65 (23.64)	144 (52.36)	18 (6.55)	48 (17.45)	
Place of origin					0.46
Urban	27 (22.69)	60 (50.42)	11 (9.24)	21 (17.65)	
Rural	38 (24.36)	84 (53.85)	7 (4.49)	27 (17.31)	
Total	65 (23.64)	144 (52.36)	18 (6.55)	48 (17.45)	
Marital-parental status					0.28
Married	56 (26.05)	108 (50.23)	15 (6.98)	36 (16.74)	
Separated or divorced or widowed	9 (15.00)	36 (60.00)	3 (5.00)	12 (20.00)	
Total	65 (23.64)	144 (52.36)	18 (6.55)	48 (17.45)	
Family income					0.01
< Regional minimum wage	39 (31.97)	60 (49.18)	4 (3.28)	19 (15.57)	
≥ Regional minimum wage	26 (16.99)	84 (54.90)	14 (9.15)	29 (18.95)	
Total	65 (23.64)	144 (52.36)	18 (6.55)	48 (17.45)	
Parent works as a health worker					0.21
Yes	2 (13.33)	6 (40.00)	2 (13.33)	5 (33.33)	
No	63 (24.23)	138 (53.08)	16 (6.15)	43 (16.54)	
Total	65 (23.64)	144 (52.36)	18 (6.55)	48 (17.45)	
Public health specialty					0.00
Health and policy administration	20 (24.39)	50 (60.98)	5 (6.10)	7 (8.54)	
Epidemiology	11 (26.83)	22 (53.66)	5 (12.20)	3 (7.32)	
Occupational and environmental health	16 (19.75)	29 (35.80)	1 (1.23)	35 (43.21)	
Health promotion	13 (30.23)	24 (55.81)	4 (9.30)	2 (4.65)	
Other	5 (17.86)	19 (67.86)	3 (10.71)	1 (3.57)	
Total	65 (23.64)	144 (52.36)	18 (6.55)	48 (17.45)	

Characteristics	Preferred Workplace Category				P-value
	Healthcare Facility	Government Health Agency	Non-Governmental Organization	Company	
University location					0.02
Java Island	19 (15.70)	65 (53.72)	9 (7.44)	28 (23.14)	
Not Java Island	46 (29.87)	79 (51.30)	9 (5.84)	20 (12.99)	
Total	65 (23.64)	144 (52.36)	18 (6.55)	48 (17.45)	
University ownership					0.01
Public	23 (16.31)	78 (55.32)	14 (9.93)	26 (18.44)	
Private	42 (31.34)	66 (49.25)	4 (2.99)	22 (16.42)	
Total	65 (23.64)	144 (52.36)	18 (6.55)	48 (17.45)	

Source: Primary Data, 2023

On the other hand, Table 2 describes that public health specialty was significantly associated with occupation category (p = 0.00).

Table 2. Characteristics of Respondents by Preferred Occupation Category

Characteristics	Preferred Occupation Category				P-value
	Public Health Professionals	Academics	Social Worker	Professional Consultant	
Age (years)					0.43
20 and less	31 (54.39)	8 (14.04)	10 (17.54)	8 (14.04)	
21 and over	136 (62.39)	21 (9.63)	25 (11.47)	36 (16.51)	
Total	167 (60.73	29 (10.55)	35 (12.73)	44 (16.00)	
Gender					
Female	147 (58.80)	27 (10.80)	34 (13.60)	42 (16.80)	0.20
Male	20 (80.00)	2 (8.00)	1 (4.00)	2 (8.00)	
Total	167 (60.73	29 (10.55)	35 (12.73)	44 (16.00)	
Ethnicity					0.13
Javanese	78 (69.03)	9 (7.96)	11 (9.73)	15 (13.27)	
Not Javanese	89 (54.94)	20 (12.35)	24 (14.81)	29 (17.90)	
Total	167 (60.73	29 (10.55)	35 (12.73)	44 (16.00)	
Place of origin					0.21
Urban	69 (57.98)	9 (7.56)	19 (15.97)	22 (18.49)	
Rural	98 (62.82)	20 (12.82)	16 (10.26)	22 (14.10)	
Total	167 (60.73	29 (10.55)	35 (12.73)	44 (16.00)	
Marital-parental status					0.27
Married	135 (62.79)	24 (11.16)	26 (12.09)	30 (13.95)	
Separated or divorced or widowed	32 (53.33)	5 (8.33)	9 (15.00)	14 (23.33)	
Total	167 (60.73	29 (10.55)	35 (12.73)	44 (16.00)	
Family income					0.30
< Regional minimum wage	80 (65.57)	13 (10.66)	15 (12.30)	14 (11.48)	
≥ Regional minimum wage	87 (56.86)	16 (10.46)	20 (13.07)	30 (19.61)	
Total	167 (60.73	29 (10.55)	35 (12.73)	44 (16.00)	
Parent works as a health worker					0.94
Yes	9 (60.00)	1 (6.67)	2 (13.33)	3 (20.00)	

Characteristics	Preferred Occupation Category				P-value
	Public Health Professionals	Academics	Social Worker	Professional Consultant	
No	158 (60.77)	28 (10.77)	33 (12.69)	41 (15.77)	
Total	167 (60.73	29 (10.55)	35 (12.73)	44 (16.00)	
Public health specialty					0.00
Health and policy administration	46 (56.10)	6 (7.32)	14 (17.07)	16 (19.51)	
Epidemiology	33 (80.49)	3 (7.32)	2 (4.88)	3 (7.32)	
Occupational and environmental health	62 (76.54)	6 (7.41)	6 (7.41)	7 (8.64)	
Health promotion	21 (48.84)	7 (16.28)	7 (16.28)	8 (18.60)	
Other	5 (17.86)	7 (25.00)	6 (21.43)	10 (35.71)	
Total	167 (60.73	29 (10.55)	35 (12.73)	44 (16.00)	
University location					0.41
Java Island	79 (65.29)	9 (7.44)	15 (12.40)	18 (14.88)	
Not Java Island	88 (57.14)	20 (12.99)	20 (12.99)	26 (16.88)	
Total	167 (60.73	29 (10.55)	35 (12.73)	44 (16.00)	
University ownership					0.80
Public	82 (58.16)	15 (10.64)	20 (14.18)	24 (17.02)	
Private	85 (63.43)	14 (10.45)	15 (11.19)	20 (14.93)	
Total	167 (60.73	29 (10.55)	35 (12.73)	44 (16.00)	

Source: Primary Data, 2023

This study answered the questions about where prospective public health graduates choose the workplace, what jobs they want, and what factors are related to their decisions. A key finding is that over half of the respondents prefer to work within governmental health agencies. This indicates that the public sector is still Indonesian public health students' favorite workplace. Public health graduates are commonly presumed to work in governmental settings, and public health education can support this workforce (Rory David Watts et al., 2021). Previous research has defined public health graduates as employees in the local, state, or federal health department (Krasna et al., 2021). Unfortunately, public health graduates still struggle to get jobs in governmental public health (Locke et al., 2022). The most common obstacles to entering governmental public health were a tedious and challenging hiring process, difficulty obtaining a government job with only an undergraduate degree, and a need for more knowledge about governmental public health roles (Jurs, 2020).

Another important finding is that 60.73% of respondents prefer jobs as public health professionals. This suggests that the students want occupations that are appropriate to their field. Fields of study may strongly relate to occupations in various disciplines, including health (Rory David Watts et al., 2021). The most common employment for a Public Health Bachelor is that of a health promotion officer, program or project administrator, occupational health and safety adviser, and health information manager (Rory David Watts et al., 2021). However, public health graduates can go into many different types of work. Public health is broad in scope, and not all of the public health workforce is engaged within the health sector or necessarily within the public sector (Sell et al., 2022). A study from Macleod revealed occupational heterogeneity among public health graduates, some of them employed in public health areas and others in public and private sectors (MacLeod & IJ Perry, 2018). Houghton, Braunack-Mayer, and Hiller found that graduates with a Bachelor of Health Sciences worked in

public health with a wide range of roles that show the diversity of the public health workforce (Houghton et al., 2002).

Recent studies describe changes in public health career paths because of the increasing trend of graduates to work outside the government. In 2021, Plepys et al. found that public health graduates are more employed in the healthcare industry, corporations, and academic institutions (Plepys et al., 2021). Similar to employment data from the Association of Schools and Programs of Public Health (ASPPH), the healthcare industry, organization for-profit, and academic institutions are the workplaces that employ the most public health graduates (Locke et al., 2022). Many reasons encourage public health graduates to seek employment outside the traditional public health fields. The slower employment development in the government sector only recruits a few public health graduates as the workforce (Krasna et al., 2021).

In addition, this study mentions that individual characteristics (ethnicity, family income) and academic background (university, specialty) determine job preferences among students. In contrast, a previous study reported that ethnicity did not affect the decision to select a career in public health (Tamayose et al., 2004). Similar results have been found that the main factors within school conditions affect students' career choices (Huicho et al., 2015). Similarly, another study revealed that family income was among the factors affecting the job preferences of graduate medical students and other health professionals (Engidaw et al., 2023). Related to a study in Honduras (Puertas & Rivera, 2016), specialty was also considered a factor associated with career choice. This study has the following few limitations. Firstly, the findings cannot be generalized to all students because the study sample was limited to several universities. Secondly, the questionnaire examined the job preferences of the student rather than their real choice.

These findings highlight the complex interplay between individual background, academic environment, and career aspirations among final-year undergraduate public health students. Although most students still prefer to work within governmental health agencies and in roles aligned with their academic training, barriers in recruitment and limited job availability remain significant challenges. Understanding these preferences is crucial for anticipating workforce patterns and addressing gaps in public health service delivery.

The results of this study also offer practical implications for key stakeholders. Policymakers are encouraged to expand job opportunities in public health institutions, particularly at local levels, and to provide clearer, more accessible recruitment pathways for new graduates. Universities should integrate labor market responsiveness into curriculum design, offer structured career counseling, and provide exposure to diverse public health career settings beyond the government sector. Public health agencies can support this alignment by improving internship programs, engaging in campus outreach, and simplifying recruitment mechanisms. These collaborative efforts are essential to ensure that the growing number of public health graduates are effectively absorbed into the health system and can contribute meaningfully to improving population health outcomes.

This study has several limitations that should be acknowledged. First, the use of voluntary sampling may affect the generalizability of the results, as participants might not fully represent all public health students in Indonesia. Second, the analysis was limited to descriptive and bivariate methods without multivariate modeling, which restricts the ability to control for potential confounding variables. Lastly, the study focused on stated job preferences

rather than actual job-seeking behavior, which may be influenced by additional factors after graduation, such as job market conditions or family considerations. Despite these limitations, the study provides valuable exploratory insights into job preferences among final-year public health students and can inform future research and workforce planning efforts.

4. Conclusion

This study empirically finds that job preferences among undergraduate public health students were ranked the highest for governmental health agencies, and they are more interested in working as public health professionals. Individual characteristics and academic background are significantly associated with job choices among undergraduate public health students. This study's results will help policymakers effectively create a recruitment strategy for undergraduate public health in Indonesia, tackle the shortage and maldistribution of public health workers, and thus strengthen the public health system. These findings also encourage universities to prepare curricula and learning that suit the needs of the world of work recently.

Acknowledgments (Optional)

Authors are grateful to the participants for their contributions. Authors also thank the Faculty of Sport Sciences Universitas Negeri Malang for funding this study (Grant reference number: 5.4.1/UN32/KP/2023).

References

Bao, M., & Huang, C. (2021). Job preferences of medical and nursing students seeking employment in rural China: a discrete choice experiment. *BMC Medical Education*, *21*(1), 1–12. https://doi.org/10.1186/s12909-021-02573-3

Engidaw, M., Alemu, M. B., Muche, G. A., & Yitayal, M. (2023). Rural job preferences of graduate class medical students in Ethiopia-A discrete choice experiment (DCE). *BMC Medical Education*, *23*(1), 1–12. https://doi.org/10.1186/s12909-023-04133-3

Goemaes, R., Beeckman, D., Verhaeghe, S., & Hecke, A. Van. (2019). Final year midwifery students' career expectations and job preferences : preliminary results of a cross-sectional study. *CARE4 International Scientific Nursing and Midwifery Congress*.

Harahap, N. P. (2019). *Kajian sektor kesehatan: sumber daya manusia kesehatan*. Direktorat Kesehatan dan Gizi Masyarakat, Kedeputian Pembangunan Manusia, Masyarakat, dan Kebudayaan, Kementerian Perencanaan dan Pengembangan Nasional Republik Indonesia.

Holsinger, J. W., Lewis, A. L., & Chen, Q. (2015). Undergraduate public health education: Does it meet public health workforce needs? *Frontiers in Public Health*, *3*(January), 1–3. https://doi.org/10.3389/fpubh.2015.00001

Houghton, S., Braunack-Mayer, A., & Hiller, J. E. (2002). Undergraduate public health education: A workforce perspective. *Australian and New Zealand Journal of Public Health*, *26*(2), 174–179. https://doi.org/10.1111/j.1467-842X.2002.tb00913.x

Hoyte, T., Henry, K., Kowlessar, A., Ali, A., & Mahabir, A. (2021). Factors affecting the career and speciality preferences of dental students in Trinidad and Tobago: A cross-sectional survey. *Creative Education*, *12*(08), 1792–1804. https://doi.org/10.4236/ce.2021.128136

Huicho, L., Molina, C., Diez-Canseco, F., Lema, C., Miranda, J. J., Huayanay-Espinoza, C. A., & Lescano, A. G. (2015). Factors behind job preferences of Peruvian medical, nursing and midwifery students: A qualitative study focused on rural deployment. *Human Resources for Health*, *13*(1), 1–11. https://doi.org/10.1186/s12960-015-0091-6

Jurs, L. (2020). *Undergraduate career choice in governmental public health*. Gillings School of Global Public Health.

Koblinsky, S. A., Hrapczynski, K. M., & Clark, J. E. (2015). Preparing future faculty and professionals for public health careers. *American Journal of Public Health*, *105*, S125–S131. https://doi.org/10.2105/AJPH.2014.302509

Krasna, H., Kornfeld, J., Cushman, L., Ni, S., Antoniou, P., & March, D. (2021). The new public health workforce: Employment outcomes of public health graduate students. *Journal of Public Health Management and Practice*, *27*(1), 12–19. https://doi.org/10.1097/PHH.0000000000000976

Lembaga Akreditasi Mandiri Perguruan Tinggi Kesehatan Indonesia. (n.d.). *Database hasil akreditasi*. Retrieved February 1, 2023, from https://lamptkes.org/Database-Hasil-Akreditasi

Liu, P., Liu, S., Gong, T., Li, Q., Chen, G., & Li, S. (2021). Job preferences of undergraduate pharmacy students in China: A discrete choice experiment. *Human Resources for Health*, *19*(1), 1–12. https://doi.org/10.1186/s12960-021-00626-8

Liu, S., Li, S., Yang, R., Liu, T., & Chen, G. (2018). Job preferences for medical students in China: A discrete choice experiment. *Medicine (United States)*, *97*(38), 1–9. https://doi.org/10.1097/MD.0000000000012358

Liu, T., Li, S., Yang, R., Liu, S., & Chen, G. (2019). Job preferences of undergraduate nursing students in eastern China: A discrete choice experiment. *Human Resources for Health*, *17*(1), 1–12. https://doi.org/10.1186/s12960-018-0335-3

Locke, R., Mcginty, M., Guerrero Ramirez, G., & Sellers, K. (2022). Attracting new talent to the governmental public health workforce: Strategies for improved recruitment of public health graduates. *Journal of Public Health Management and Practice*, *28*(1), E235–E243. https://doi.org/10.1097/PHH.0000000000001336

MacLeod, F., & IJ Perry. (2018). Career paths for graduates from an undergraduate public health programme in Ireland Fiona. *European Journal of Public Health*, *1*(28).

Mawarni, D., & Sabran, S. (2022). How is the availability of public health workers in Indonesia's primary health care? Secondary data analysis of health facility research in 2019. *Journal of Public Health in Africa*, *13*(s2). https://doi.org/10.4081/jphia.2022.2400

Plepys, C. M., Krasna, H., Leider, J. P., Burke, E. M., Blakely, C. H., & Magaña, L. (2021). First-destination outcomes for 2015-2018 public health graduates: Focus on employment. *American Journal of Public Health*, *111*(3), 475–484. https://doi.org/10.2105/AJPH.2020.306038

Puertas, E. B., & Rivera, T. Y. (2016). Factors that influence career choice in primary care among medical students starting social service in Honduras. *Revista Panamericana de Salud Publica/Pan American Journal of Public Health*, *40*(5), 309–317.

Sell, K., Hommes, F., Fischer, F., & Arnold, L. (2022). Multi-, inter-, and transdisciplinarity within the public health workforce: A scoping review to assess definitions and applications of concepts. *International Journal of Environmental Research and Public Health*, *19*(17), 1–23. https://doi.org/10.3390/ijerph191710902

Tamayose, T. S., Madjidi, F., Schmieder-Ramirez, J., & T. Rice, G. (2004). Important factors when choosing a career in public health. *Californian Journal of Health Promotion*, *2*(1), 65–73. https://doi.org/10.32398/cjhp.v2i1.584

Watts, Rory D., Bowles, D. C., Ryan, E., Fisher, C., & Li, I. W. (2020). No two workforces are the same: A systematic review of enumerations and definitions of public health workforces. *Frontiers in Public Health*, *8*(November), 1–10. https://doi.org/10.3389/fpubh.2020.588092

Watts, Rory David, Bowles, D. C., Fisher, C., & Li, I. W. (2021). What do public health graduates do and where do they go? An analysis of job destinations and mismatch in Australian public health graduates. *International Journal of Environmental Research and Public Health*, *18*(14), 1–16. https://doi.org/10.3390/ijerph18147504

Yeager, V. A., Beitsch, L. M., & Hasbrouck, L. M. (2016). A mismatch between the educational pipeline and public health workforce: Can it be reconciled? *Public Health Reports*, *131*(3), 507–509. https://doi.org/10.1177/003335491613100318

Yeager, V. A., Wisniewski, J. M., Amos, K., & Bialek, R. (2016). Why do people work in public health? Exploring recruitment and retention among public health workers. *Journal of Public Health Management and Practice*, *22*(6), 559–566. https://doi.org/10.1097/PHH.0000000000000380