

BUKTI CORESPONDING AUTHOR PUBLIKASI PENELITIAN

Judul artikel	Validation of diabetes mellitus patient behavior questionnaire in primary health care service
Penulis	Ginjar Zukhruf Saputri ^{1*} , Akrom ¹ , Haafizah Dania ¹ , Okta Muthia S ²
Jurnal	International Journal of Public Health Science, 2019
Keterangan	Syarat khusus

Lampiran bukti korespondensi (terlampir)



Ginanjari Zukhruf Saputri <zukhruf.alparslan@gmail.com>

[IJPHS] Submission Acknowledgement

2 messages

Lina Handayani <linafkm@gmail.com>

Wed, Feb 20, 2019 at 9:16 AM

To: "M.Sc.,Apt Ginanjari Zukhruf Saputri" <zukhruf.alparslan@gmail.com>

The following message is being delivered on behalf of International Journal of Public Health Science (IJPHS).

M.Sc.,Apt Ginanjari Zukhruf Saputri:

Thank you for submitting the manuscript, "VALIDATION OF DIABETES MELLITUS PATIENT BEHAVIOR QUESTIONNAIRE IN PRIMARY HEALTH CARE SERVICE" to International Journal of Public Health Science (IJPHS). With the online journal management system that we are using, you will be able to track its progress through the editorial process by logging in to the journal web site:

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Username: ginanjari zukhruf

If you have any questions, please contact me. Thank you for considering this journal as a venue for your work.

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International Journal of Public Health Science (IJPHS)

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Ginanjari Zukhruf Saputri <zukhruf.alparslan@gmail.com>

Wed, Feb 20, 2019 at 9:18 AM

To: Haafizah Dania <fizadan.djogja@gmail.com>, abdullah akrom <akmaa_uad@yahoo.co.id>, Sari Muthiaokta <muthiaoktasari@gmail.com>

Best Regards,

Ginanjari Zukhruf Saputri, M.Sc., Apt

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Pharmacy Faculty of Ahmad Dahlan University
Yogyakarta, Indonesia

[Quoted text hidden]



Ginanjar Zukhruf Saputri <zukhruf.alparslan@gmail.com>

Revision IJPHS

3 messages

fahrun iaes <fahruniaes@gmail.com>
To: zukhruf.alparslan@gmail.com

Wed, Jul 17, 2019 at 10:50 AM

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Please revision your paper:

-Extend the paper with 10 journal papers

-reduce your abstract

-Cite each table and figure before appeared

-Please ensure that: all references have been cited in your text; Each citation should be written in the order of appearance in the text; The references must be presented in numbering and CITATION ORDER is SEQUENTIAL [1], [2], [3], [4],

Thank you

Ginanjar Zukhruf Saputri <zukhruf.alparslan@gmail.com>
To: fahrun iaes <fahruniaes@gmail.com>

Mon, Jul 29, 2019 at 11:49 PM

ok

*Best Regards,***Ginanjar Zukhruf Saputri.,M.Sc.,Apt**zukhruf.alparslan@gmail.com

Pharmacy Faculty of Ahmad Dahlan University

Yogyakarta, Indonesia

On Wed, Jul 17, 2019 at 10:51 AM fahrun iaes <fahruniaes@gmail.com> wrote:

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Thank you

fahrun iaes <fahruniaes@gmail.com>
To: Ginanjar Zukhruf Saputri <zukhruf.alparslan@gmail.com>

Wed, Jul 31, 2019 at 8:30 AM

Dear Author

we heard that you join in a conference. So, which where do you want to publish your paper?

Thank you for your clarification

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ok

*Best Regards,***Ginanjar Zukhruf Saputri.,M.Sc.,Apt**zukhruf.alparslan@gmail.com

Pharmacy Faculty of Ahmad Dahlan University

Yogyakarta, Indonesia

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Thank you



Ginanjari Zukhruf Saputri <zukhruf.alparslan@gmail.com>

IJPHS revision

2 messages

fahrun iaes <fahruniaes@gmail.com>

Mon, Aug 26, 2019 at 3:09 PM

To: Malik Saepudin <malik_saepudin@yahoo.co.id>, larasatifatati@gmail.com, Amal Aboelnour <amalaboelnour@gmail.com>, trivena78@yahoo.com, jasrida yunita <jasridayunita@gmail.com>, Ginanjari Zukhruf Saputri <zukhruf.alparslan@gmail.com>

Dear Author

Please sent your paper revision soon because we are going to publish on Sept, 2019. we wait you until tomorrow (August 27, 2019). If you haven't sent until deadline, we' re going to schedule your paper on the next issue.

Thank you for your attention and your cooperation

Best regards
Fakhrunnisa
Editor Assistant of IJPHS

Ginanjari Zukhruf Saputri <zukhruf.alparslan@gmail.com>

Thu, Nov 28, 2019 at 11:24 AM

To: fahrun iaes <fahruniaes@gmail.com>

dear Editorial of IJPHS
I am sorry for my late,
with this email, I wil confirm about my article.
the revision of our article attached bellow.
Thanks

Best Regards,**Ginanjari Zukhruf Saputri.,M.Sc.,Apt**zukhruf.alparslan@gmail.com

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**fullpaper Validasi Perilaku pasien DM di pelayanan primer 2018_eng. 1.doc**

103K



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revision paper Bu Putri UAD

7 messages

Ginanjari Zukhruf Saputri <zukhruf.alparslan@gmail.com>
To: fahrin iaes <fahruniaes@gmail.com>

Sat, Nov 30, 2019 at 1:27 PM

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there some revisions in the title of this paper.
please find the paper in the attachment bellow.

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Yogyakarta, Indonesia**VALIDATION DM BEHAVIOUR QUESTIONNAIRE. IJPHS. revision 1.docx**
108K

fahrin iaes <fahruniaes@gmail.com>
To: Ginanjari Zukhruf Saputri <zukhruf.alparslan@gmail.com>

Wed, Dec 4, 2019 at 1:37 PM

Dear Author

We have received your paper, and we have checked your paper, please check and edit your paper in the paper that we attach in below. We wait your revision on Tomorrow (Dec 5, 2019)

Thank you
Best regards
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**16 18348-32639-1-RV.docx uL.docx**
60K

Ginanjari Zukhruf Saputri <zukhruf.alparslan@gmail.com>
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Sat, Dec 7, 2019 at 4:31 AM

Dear Editorial IJPHS

with this email, I already sent my revision
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Yogyakarta, Indonesia

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**Validation DM behaviour questionnaire rev.2.docx**
76K

fahrin iaes <fahruniaes@gmail.com>
To: Ginanjari Zukhruf Saputri <zukhruf.alparslan@gmail.com>

Tue, Dec 10, 2019 at 9:26 AM

Dear Author

mohon untuk cek dan edit kembali paper Anda, kami masih menemukan penulisan sitasi pada body text Anda sedikit tidak urut. Kami tunggu perbaikan Anda hari ini (10 Dec 2019)

Terimakasih

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 **13 Validation DM behaviour questionnaire rev.2.docx**
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fahrin iaes <fahruniaes@gmail.com>
To: Ginanjar Zukhruf Saputri <zukhruf.alparslan@gmail.com>

Mon, Dec 16, 2019 at 7:52 AM

Dear Author

Please recheck and edit your paper, and resent your revised as soon as possible

Thank you

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Ginanjar Zukhruf Saputri <zukhruf.alparslan@gmail.com>
To: labcbt@pharm.uad.ac.id

Mon, Dec 23, 2019 at 3:29 PM

Best Regards,

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Ginanjar Zukhruf Saputri <zukhruf.alparslan@gmail.com>
To: fahrin iaes <fahruniaes@gmail.com>
Cc: abdullah akrom <akmaa_uad@yahoo.co.id>

Mon, Dec 23, 2019 at 3:53 PM

dear Tim Editorial Board

I am sorry for my late

Bt this email, I already sent my revision paper

please find this paper in attachment below

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Ginanjari Zukhruf Saputri <zukhruf.alparslan@gmail.com>

Confirmation IJPHS (payment)

1 message

Maria ulfah <ulfah057@gmail.com>
To: zukhruf.alparslan@gmail.com

Fri, Jan 10, 2020 at 7:54 AM

Dear Author,

The reviewing process of your paper has been completed. Based on the opinions of the reviewers and the Associate Editor in charge, your manuscript has been ACCEPTED for publication in the International Journal of Public Health Science (IJPHS) Vol. 8 No. 4: December 2019. Please accept my congratulations!

Please completed your procedure, you can pay in the bank account, it's about 2.250.000 IDR or 150 USD (sent your payment receipt in this email (ulfah057@gmail.com) and linafkm@gmail.com):

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Maria Ulfah

Staff of IJPHS

VALIDATION OF DIABETES MELLITUS PATIENT BEHAVIOR QUESTIONNAIRE IN PRIMARY HEALTH CARE SERVICE

Ginanjar Zukhruf Saputri¹, Akrom*, Haafizah Dania*, Okta Muthia S*

* Faculty of Pharmacy, Ahmad Dahlan University

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ABSTRACT

In Indonesia has rising diabetes mellitus (DM) prevalence, especially in primary health care with government insurance called BPJS. Adherence behavior to treatment of diabetes mellitus was factors to achieve blood glucose level as a Goal Therapy of DM. In a previous study has developed a questionnaire as measurement instrument for DM-Hypertension and DM-Dyslipidemia patients behavior in hospitals. DM patient condition was different between in primary health care and hospital related to comorbid. This study aims to develop and validation a questionnaire as measurement instrument for knowledge and adherence behavior of DM patients in primary health care. Cross sectional study design was conducted in diabetes mellitus patient. Inclusion criteria were patients in the age group 18 – 65 years, diagnosed with DM , receiving at least 1 oral antidiabetic medication. Questionnaire questions for behavioral item were developed based on Diabetes Mellitus management guidelines and references to previous studies. Evaluation and validation by expert was carried out on diabetes mellitus experts and clinical psychologists. The pilot study was conducted on 10 healthy patients and 10 patients with diabetes who enrolled inclusion criteria. Questionnaire validation test was conducted with 41 DM outpatient at PKU Muhammadiyah Hospital in Yogyakarta. Collecting data by interviewing patients based on questionnaire. Statistical analysis was performed using SPSS with Pearson correlation coefficients for validation test and Cronbach alpha coefficients for reliability test of the questionnaire. Adherence behavior questionnaire consists of 12 question items, which are divided into 3 domains: cognitive, affective, and psychomotor domains. Validation results showed 12 valid items where the pearson correlation value was > 0.308 ($n = 41$). Cronbach alpha as reliability test results showed 0.78. This result showed a questionnaire were valid and reliable in Diabetes Mellitus patients. This instrument would be use in primary health care for measuring adherence behavior of DM patients.

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1. INTRODUCTION

Diabetes mellitus is categorized as one of a disease caused by the chronic abnormality on the metabolic system. It characteristics includes the presence of hyperglycemia with abnormality on the carbohydrate, fat, and protein metabolism as a result of insulin insufficiency ^[1]. The number of DM patients increases each year globally. In the year of 2010, the number reaches 285 million cases with 6,6% of the patients are around 20-79 years old ^[2]. DM is ranked number 6 out of 10 of the main disease of outpatient care in hospital in Indonesia according to the Healthcare Profile of Indonesia ^[3].

It is proven through various clinical trial that pharmacology therapy is able to reduce risk of death caused by cardiovascular complication and hypertension ^[4]. However, the non-compliant and non-concordance of the patients undergo the pharmacology therapy is still extravagantly present ^[5]. The cause of non-compliant actions of the patients on undergoing medicinal therapy are the cost, medicinal regiment, the patients itself, the family, and the low geriatric cognitive level ^{[5][6]}. Knowledge and attitude towards the treatment of type 2 DM of the patients does not always in line with the health status of the patients. It is often that the patients could not interpret the knowledge and attitude into the positive character that is relevance to the dietary including food intake, exercise done, and weight loss ^{[7] [8]}.

DM management has essential components which have been developed. They are: Diabetes Self-Management, education, lifestyle intervention (modification) and therapy management to achieve the therapy goals which is controlling the glucose level and hypertension and hyperlipidaemia management ^[9]. Important education points on DM management are lifestyle modifications, dietary control, exercise routine, not smoking ^{[10][11]}. The research conducted by ^[11]Mustefa (2014) in Ethiopia shows that lifestyle modification plays a vital role on the type 2 DM mitigation and management. It includes lifestyle modification education including exercise routine, dietary intake control or carbohydrate diet, and weight control. It is also stated that medical staffs have a quite significant role on intervening on changes in the lifestyle of type 2 DM patients.

A questionnaire regarding the attitude of DM patients with comorbid hypertension and hyperlipidaemia has been developed in the previous research ^{[12] [13]}. In contrast to the previous research, this research involves the actuations of the government regulation regarding the health care service of BPJS insurance in which the majority of the priority patients are the type 2 DM patient without other complications who receives primary health care services of the hospital. Thus, an instrument used to measure the attitude type 2 DM patients in primary service is needed to identify and to ease the counselling process.

Developing an instrument in measuring the knowledge regarding the type 2 DM management, lifestyle modifications, exercise routine, and oral antidiabetic therapy routine is required. In line with the previous statement, this research is aimed to develop and to validate the questionnaire regarding the attitude of type 2 DM patients in primary health care services.

2. RESEARCH METHOD

This research had been reviewed and approved by the Research Ethical Committee of Ahmad Dahlan University. The development of the questionnaire was referred to the guideline of DM management and was referred to the previous research in which the questionnaire regarding knowledge and attitude towards DM is researched. It employed the method focus group discussion (FGD). Evaluation and validation was done by a doctor whose competence includes Diabetes Mellitus, Clinical Psychology, and Pharmacy. Pilot testing was done in order to figure out the level of understanding of the questionnaire on 10 healthy respondents and 10 type 2 DM patients inclusively. Then the validation and reliability test of the questionnaire was done on 41 type 2 DM patients who is under the outpatient treatment of PKU Muhammadiyah Yogyakarta hospital. The validity test was done by interviewing the type 2 DM patients using the questionnaire. The inclusion criteria were male and female patients, age 18-65, have been diagnosed with type 2 DM, have underwent oral antidiabetic therapy, literate, have sufficient hearings, and willing to be involved cooperatively. The exclusive criteria were pregnant patients. The collection of the data was done by the standardized pharmacist.

The questionnaire was constructed from 12 close ended questions with 3 domains which are cognitive, affective, and psycho-motoric in Bahasa Indonesia. Each question could be answered with either “yes” or “no” with the score 1 and 0 consecutively except for the questions number 7 and 12 with the “yes” answer was score with 1 and the “no” answer was scored with 1. The cumulative score of the answers then was used to determine the phase of attitude level of type 2 DM patients which were categorized into 4 categories. These categories are pre-contemplation phase (provided there is no correct answer on all domain), contemplation phase (provided the correct answer is only in the cognitive domain), preparation phase (provided the correct answer is on the cognitive domain and affective domain), and action phase (provided the correct answer is present on all of the domain).

3. RESULTS AND ANALYSIS

The research was done on 41 type 2 DM patients with the majority of the sample is female (58.5%) and has married (100%). The majority of the age range of the sample was >61 years old (58,5%) and had went through more than 9 years of education (high school or college), had had a DM medical record (63,4%) with more than 5 years (65,9%). Moreover, the majority of the patient had undergone a carbohydrate diet (78%), and did not smoke (85,4%). The demography of the patients' characteristics can be seen in the table 1 below.

Table 1. Demographic Characteristics of type 2 DM Patients

Demographic Characteristics	N	(%)
Gender		
Female	24	58.5%
Male	17	41.5%
Marriage Status		
Married	41	100%
Not Married	0	-
Age		
≤60 th	17	41.5%
>61 th	24	58.5%
Education		
Less than 9 years	9	22.0%
More than 9 years	32	78.0%
Occupations		
PNS (Civil Servant)	5	12.2%
Entrepreneurs, Outsourcers, Office Workers	7	17.1%
Not Working (Housewives or Retirements)	29	70.7%

Diagnosed with Diabetes Mellitus		
Present	15	36.6%
Not Present	26	63.4%
DM Length		
Less than 2 Years	8	19.5%
3-5 Years	6	14.6%
More than 5 Years	27	65.9%
Dietary		
Carbohydrate Diet	32	78.0%
Non-Carbohydrate Diet	9	22.0%
Habits		
Smoking	6	14.6%
Not Smoking	35	85.4%

The pilot test showed the average time in completing the questionnaire or the interview were around 10-15 minutes. Most of the respondents had already understood the content of the questionnaire. The validity test done on 41 patients showed 12 question items are valid with Pearson's correlation score >0.308 ($n=41$). The reliability test showed the Cronbach alpha score on 0,78 which is considered as reliable to be used on type 2 DM patients. Both of the tests are shown in table 2.

Bartlett's test of sphericity was employed in order to determine the correlation among variables. The test showed the significance number of 0.000. The KMO score (at least $>0,50$) appeared on the score of 0,546 which then be inferred that the factor analysis test can be done to this instrument. The factor analysis test then resulted on the categorization of the questions into four domains based on the eigen value >1 . These domain is categorized as factor 1 to factor 4 with the eigen value of 3,310; 1,727; 1,458; and 1,243 consecutively. The questions were being grouped into 4 components in which the contents of each component was constructed as follows: component 1 consists of question number 1, 2, 3, 4; component 2 consists of question number 5, 6, 7; component 3 consists of question number 9 only; and component 4 consists of question number 8, 10, 11, 12.

The factor analysis test resulted that component 1 and 2 are in line with the 2 domains of the questions within the questionnaire where the cognitive domain is explained in question number 1 to 4, and the affective domain is represented in question number 5 to 7. The psychomotor domain is represented with question number 8, 10, 11, and 12 in the questionnaire regarding the medicinal intake and lifestyle modification and exercise routine. The question number 9 is being separated from the rest because this question focuses on the carbohydrate diet apart from the other questions.

The psychomotor domain was designed to measure 3 aspects which are medicine intake routine, carbohydrate intake, and exercise routine. Thus, this domain depicts the modification of lifestyle and the medicine intake routine of the patients, in line with instruments that were developed in India, Ethiopia, and Malaysia regarding the knowledge, attitude, and practice outcomes of the patients ^{[14] [11] [15]}.

Table 2. Validation Test Result on Attitude of DM Patient Questionnaire

No	Questions	Pearson's correlation
		N= 41
	COGNITIVE	
1	Do you know that the cause of diabetes is related to insulin hormone?	0,596**
2	Do you know that the oral anti diabetes medicine has to be taken continuously to control sugar blood?	0,675**
3	Do you know that uncontrolled diabetes can cause eye damage, kidney failure, stroke, and coronary hearts?	0,516**
4	Do you know that hypoglycemic symptoms are including tremor, cold sweat, buzzy eyesight, and fatigue?	0,413**
	AFFECTIVE	

5	Do you think that taking anti diabetes medicine frequently can control the sugar blood?	0,553**
6	Do you willing to take anti diabetes medicine frequently to control the sugar blood?	0,652**
7	Do you think that taking anti diabetes medicine frequently can cause kidney failure?	0,377*
	PSYCHOMOTOR	
8	Do you frequently bring your medication (oral anti diabetes medicine) in every trip you make?	0,434**
9	Have you been reducing the consumption of sugar/carbohydrate to control sugar blood?	0,314*
10	Have you been exercising (walking/DM exercise) for about 3 or 4 times in a week?	0,450**
11	Do you still take the oral anti diabetes medicine even though the clinical symptoms had already gone?	0,626**
12	Have you ever forgotten to take the medicine within the last week?	0,514**

There are four level of categories on patients' attitude which are pre-contemplation stage, contemplation stage, preparational stage, and action stage. These categories are developed based on the DiClemente trans theoretical model (2014) [16]. The distribution of the questionnaire showed that the attitude level of type 2 DM patients is mostly within the pre-contemplation stage (61%), then followed by contemplation stage (26,8%), preparational stage (7,3%), and action stage (4,9%). The 61% percentage showed that most of the patient have low awareness towards the DM management. The intervention needed is to motivate and educate regarding the DM management and the obedience in doing the therapy. 26,8% of the population sample are aware of their illness and are starting to change their attitude into contemplation stage, preparational stage, action stage, or maintenance stage. The other 7,3% (preparational stage) and 4,9% (action stage) showed their attitude has changed into the readiness and willingness on taking the medication, on doing diet, on doing exercise and on doing therapy accordingly.

4. CONCLUSION

This research showed that the questionnaire on attitude of type 2 DM patients is valid and reliable to be used in primary health care service. This questionnaire can be used by the pharmacist to obtain the data on pre-screening regarding the level of attitude of type 2 DM patients in primary health care service to improve the compliant and the education of the patient regarding the treatment.

ACKNOWLEDGEMENTS

Firstly we would like to thank for KEMENRISTEK DIKTI as a founder in this study. The second we would like to thank the Pharmacy Faculty of Universitas Ahmad Dahlan for granting us the permission of this study. We are also grateful to PKU Muhammadiyah Yogyakarta Hospital for granting us the permission of this study. Our thanks to all pharmacists Nurma, S.Farm.,Apt, Neni S.Farm.,Apt who have helped technically in this study. Our thanks to all of Diabetes Mellitus patients for voluntarily participating, thank you for your time. Also thanks to Amarilly Suta for revision of grammer in this script writing.

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Title of manuscript is short and clear, implies research results (First Author)

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