RESEARCH ARTICLE

REVISED The effect of electronic and printed module about drug abuse prevention on teachers' beliefs in Indonesia [version 2; peer review: 2 approved, 1 approved with reservations]

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Abstract

Background: Drug abuse is a serious global health problem. Globally, **269** million people **or 5.3 percent of the population aged 15–64 years used** drugs **in 2018**. Evidence shows that most drug addicts start using drugs in adolescence (<15-years-old). Adolescents need role models who are able to guide them; teachers have important roles as they are primary role models for students. Therefore, teachers should have positive beliefs to guide students effectively, i.e. they should have good awareness about the threat of drug abuse and high confidence to implement required prevention. This research developed an alternative electronic delivery method of learning material to empower teachers in preventing drug abuse. This study aimed to compare the effect of the electronic and a printed teaching module on teachers' beliefs about drug abuse prevention.
Methods: 260 junior high school teachers were selected randomly. These teachers were split into **two** groups. Before intervention, a questionnaire was completed by both groups. The teachers then completed the learning material: electronic module in the **first** group and printed module in the **second** group. One month later, data was collected from both groups using the same questionnaire to assess the beliefs of the teachers
Results: There was significant positive effect on teachers' beliefs, both in **electronic module** and **printed module** groups. All categories of beliefs at one month after intervention were significantly higher than those at baseline (P<0.001). Based on between group comparison analysis of mean changes, perceived susceptibility in **electronic module** group was significantly higher than **printed module** group (P<0.001), while perceived severity, benefits, barriers and efficacy were not significantly different (P>0.05).
Conclusions: Electronic and printed module intervention significantly increased teachers' beliefs in drug abuse prevention. The printed

Open Peer Review

Approval Status ✓ ? ✓

	1	2	3
version 2 (revision) 17 Sep 2020	✓ view		✓ view
version 1 29 Jan 2019	? view	? view	

1. **William B. Hansen**, Prevention Strategies, LLC, Browns Summit, USA
2. **Manop Kanato**, Khon Kaen University, Khon Kaen, Thailand
3. **Adama Grace Ngozi**, University of Nigeria, Nsukka, Nigeria

Any reports and responses or comments on the article can be found at the end of the article.

module was still effective to be used as learning media, while the electronic module was an alternative with some advantages.

Keywords
electronic module, teachers' beliefs, drug abuse, prevention

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Author roles: Ghozali G: Conceptualization, Data Curation, Formal Analysis, Investigation, Methodology, Project Administration, Resources, Validation, Visualization, Writing – Original Draft Preparation; **Azuhairi A A**: Supervision; **Mohd Zulkefli NA**: Supervision; **Ibrahim F**: Supervision

Competing interests: No competing interests were disclosed.

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First published: 29 Jan 2019, **8**:115 https://doi.org/10.12688/f1000research.17628.1

REVISED **Amendments from Version 1**

1. The title was slightly updated by adding "and printed", as suggested by reviewer

2. The second affiliation of the first author has been added

3. The background, methods and results sections of the abstract were slightly changed to suit the overall content of the article

4. The first paragraph of the introduction were partly changed according to the newer reference of World Drug Report, as suggested by the reviewer

5. The words of the "intervention group" and "control group" have been changed to "group 1" and "group 2" in the whole of the article, as suggested by reviewer that both groups are treatment groups

6. Addition of more detailed explanation in the study design, especially to clarify the intervention and implementation process, as suggested by the reviewer. There has also been made clear that the "pretest" is referred to as "baseline" conditions

7. The grammar of the third paragraph in the section of study participants has been corrected according to the reviewer' s suggestion

8. The alpha coefficients have been added for each of the five subclasses of beliefs, as suggested by the reviewer

9. The data analysis section has been improved. Paired t and Wilcoxon tests replaced with repeated measure ANOVA and the between groups analysis using Kruskal Wallis Test. Significance level has been corrected to $P < 0.05$.

10. Tables 3 and 4 have been combined. The description of Table 3 in the results section has been changed.

11. The second paragraph in the discussion has been improved, focusing more on the interpretation of the results

12. The discussion section has been added with one paragraph to make it more clear

13. Reference list was updated. Reference no.1 was changed with the newer one. There was the addition of one reference (no.15) to support discussion

Any further responses from the reviewers can be found at the end of the article

Introduction

Drug abuse is a global health problem. Globally, the total numbers and the prevalence of drug users in the world have been on the rise, especially in developing countries. In 2009, it was estimated that there were 210 million users or the equivalent of 4.8 percent of the world's population aged 15–64 years, while in 2018 it was estimated that there were 269 million users or 5.3 percent of the population[1]. The increase in drug users was much faster in developing countries than in developed countries. This was partly due to the difference in the growth of the population of adolescents and young adults, which made up the largest proportion of those who using drugs, which grew by about 16 percent in developing countries and decreased by 10 percent in developed countries in the 2000–2008 period[1]. In a study of HIV testing experience of drug users in Bali, there is evidence that most of the subjects in this study (60%) started using drugs in junior high school, aged 15-years-old or less[2].

Adolescence is a critical period because in this period there will be many changes in individual development, physically, psychologically and socially. In this period, adolescents will undergo many conflicts, including between the need for self-control and the need to be independent. In these conditions, adolescents require other persons to guide them. There seems to exist a general consent that education, and teachers in particular, have an important role to play by imparting knowledge, values and skills, as well as by acting as role models for students. Teachers should have adequate preparation to play their role sufficiently and effectively, which involves a combination of cognitive and practical knowledge and skills, values, motivation and attitudes. The lack of this set of preparation may impart a bad influence on the students' learning outcomes and also students' behaviors.

Teaching is one enabling and reinforcing factor of student's behavior, including student's health behavior[3]. Positive beliefs of teachers are needed in their role to reinforce factors and be good models for students, including in drug abuse prevention. Hanley *et al.* studied the influence of teacher training on the fidelity of substance use prevention programs implementation in the United States. This study concluded that teacher training on this subject significantly increased the fidelity of implementation of the prevention program[4].

Nowadays in Indonesia and many other developing countries, in the field of media and health promotion methods on drugs and the prevention of drug abuse, it is still very rare to find media or methods of delivering messages about the danger of drug abuse and the importance of its prevention that utilizes technological advances, especially for specific individuals like teachers. The electronic messaging media are mostly just short messages via television or radio for universal targets. Media with more complete message content in the form of books or printed brochures generally only target teenagers and general society. Macedo-Rouet *et al*. concluded that there was a strong motivation for using electronic books, and the level of users' satisfaction was generally very high with this type of medai[5]. Many studies have also showed that the positive valuation towards electronic books was due to their accessibility and availability[6,7]. Shelburne[8] stated that the increased availability of electronic books has influenced students' perception and students value electronic books more than printed ones.

This research developed an alternative electronic delivery method of learning media to empower teachers in preventing drug abuse in the school setting. This study aimed to compare the effect of the electronic module with a printed module on teachers' beliefs in drug abuse prevention among students.

Methods

Study design

This study used comparative design to determine the effects of educational intervention using drug abuse prevention module towards changing and improving teachers' beliefs in drug abuse prevention. The study was conducted from 10th October to 5th December 2016. The intervention in this study was educational intervention using a specific drug abuse module in electronic form for group 1 and printed form for group 2. Both forms of this module have the same content. Before

being given the intervention in the form of modules, a pretest measurement was carried out using a beliefs questionnaire to each of teacher in group 1 and group 2. This pretest was referred to the baseline condition. After the pretest was completed, the module was given to each teacher in the two groups, electronic module for group 1 and printed module for group 2. Each teacher was asked to read and learn the module that has been given completely. In the purpose to avoid interaction bias, each respondent was asked not to provide and distribute the module to others, at least during the study period. One month after the module was given to each teacher, post-test measurement using the same questionnaire was carried out for each teacher in both groups.

Study participants

The final participants of this study were 260 junior high school teachers in Balikpapan, Indonesia. The study sample size was calculated using Jekel's formula[9]. The minimum sample size resulted from the calculation was 46 subjects per-group. In accordance with design effect, this number was multiplied by 2; therefore, the minimum number was 92 subjects per-group. With the consideration of 20% attrition rate, the number of expected sample was 115 persons per-group or 230 persons for both groups.

A cluster random sampling was used in this study to select 6 schools from the total of 22 junior high schools. The inclusion criteria of participants were teachers with permanent and full-timer status, and all teachers who signed a written consent form to participate in the study. A total of 278 teachers met the inclusion criteria of this study, from 6 schools selected. Then, the random number assignment was used to allocate each selected school to group 1 or group 2.

To prevent selection bias, a researcher assistant performed the allocation process with the instruction that they had to allocate participants to group 1 and group 2, without identifying which group is the intervention or control groups. The result of random assignment were three schools in the group 1 and the other three schools in group 2, with the total number of teachers who agreed to partake in the study being 133 teachers in the group 1 and 145 teachers in the group 2. Therefore, 278 teachers in both groups was set as participants in this study, but 18 teachers could not complete the study or dropped-out from the study with various reasons. Therefore, a total of 260 teachers in both groups completed the study: 128 teachers in the group 1 and 132 teachers in the group 2.

In the purpose to prevent bias from the participants, this study was set as a single-blinded study, where all of participants was unaware of whether they are in the intervention or control group. All of investigators made an agreement not to inform to participants about which group they were in, throughout the period of the study.

Electronic and printed module, and questionnaire

This study involved three experts in training module development and two practitioners in drug and drug abuse prevention to determine the validity of the module and questionnaire used in this study. Before being used in this study, the module and questionnaire were pretested in teachers who did not participate in this study to examine the reliability. The values of Cronbach alpha of the questionnaire were 0.700 for perceived susceptibility, 0.705 for perceived severity, 0.632 for perceived benefit, 0.716 for perceived barriers, and 0.690 for perceived self-efficacy.

The content of the educational module included definition and types of drugs, factors affecting drug abuse, early detection of drug abuse, usual characteristics of drug abuser, effects of drug abuse, strategies of drug abuse prevention, the role of school and teacher in drug abuse prevention, and how to build a free drugs school.

The questionnaire was used to measure teachers' beliefs about drug abuse and drug abuse prevention. This questionnaire consisted of four statements about perceived susceptibility, four statements about perceived severity, three statements about perceived benefits, three statements about perceived barriers, and seven statements about perceived self-efficacy.

Questionnaire and modules are available: http://doi.org/10.5281/zenodo.2546532[10]

Data analysis

Descriptive statistics was used to analyze sociodemographic variables and component of beliefs from the questionnaire at baseline. Chi-squared and Mann Whitney U test were used to compare these variables between groups at baseline. A one-way ANOVA with repeated measures test was used to determine the effect of intervention in each group, and a Kruskal-Wallis test was used to compare effect of intervention between groups. All statistical analysis was performed using SPSS Version 24, with significance level of $P < 0.05$.

Ethical approval

This study obtained approval from Balikpapan District Office of Ministry of Education (420/2180/SKT-VIII/2016) and The University Research Ethics Committee of the Universiti Putra Malaysia (UPM/TNCPI/RMC/1.4.18.1 (JKEUPM)/F1). Written informed consent was obtained from the teachers before they were recruited into the study.

Results

Table 1 describes the sociodemographic characteristics of study participants in each group. Most of the participants in both groups were female and Javanese. The mean of age was 41.53 ± 9.031 years in the group 1 and 43.19 ± 9.167 years in the group 2. The mean of duration of work was 15.79 ± 8.890 years in the group 1 and 17.00 ± 9.388 years in the group 2. There were no significant differences between groups on the mean of age and duration of work, field of teaching, proportion of gender, and ethnicity.

Table 2 describes each category of beliefs mean score from the questionnaire of participants in the two groups at baseline. There were no significant differences between groups on participants' categories of beliefs at baseline (P value > 0.05). Table 3

Table 1. Comparison of sociodemographic characteristics between study groups (n=260).

Characteristics	Group 1 n=128 f (%)	Group 2 n=132 f (%)	Test value	P value
Gender			x^2=0.694	0.405
Male	47 (36.7)	41 (31.1)		
Female	81 (63.3)	91 (68.9)		
Ethnicity			x^2=2.656	0.617
Banjar	31 (24.2)	26 (19.7)		
Bugis	12 (9.4)	15 (11.4)		
Java	57 (44.5)	69 (52.3)		
Kutai	10 (7.8)	7 (5.3)		
Others	18 (14.1)	15 (11.4)		
Field of Teaching			x^2=3.904	0.973
Bahasa Indonesia	15 (11.7)	18 (13.6)		
English	13 (10.2)	14 (10.6)		
Counseling	9 (7.0)	11 (8.3)		
Science	19 (14.8)	20 (15.2)		
Social	14 (10.9)	16 (12.1)		
Art	10 (7.8)	10 (7.6)		
Islamic Education	7 (5.5)	9 (6.8)		
Math	14 (10.9)	16 (12.1)		
Christian Education	1 (0.8)	2 (1.5)		
Civic Education	16 (12.5)	9 (6.8)		
ICT	2 (1.6)	1 (0.8)		
Sport Education	8 (6.2)	6 (4.5)		
Age	41.53 ± 9.031	43.19 ± 9.167	Z=-1.629	0.103
Work Duration	15.79 ± 8.890	17.00 ± 9.388	Z=-0.990	0.322

*Significant level at P<0.05

Table 2. Comparison of participants' beliefs on drug abuse prevention between study groups at baseline (n=260).

Categories	Group 1 n=128	Group 2. n=132	Test value	P value
Susceptibility	11.81±2.982	11.55±3.187	t = 0.697	0.486
Severity	17.88±1.607	17.61±1.759	Z=-1.063	0.288
Benefits	11.88±1.495	11.89±1.785	Z=-0.756	0.449
Barriers	9.73±2.257	9.72±1.788	t = 0.058	0.954
Efficacy	26.56±3.804	26.35±3.477	Z=-0.140	0.889
Total beliefs	77.86±6.812	77.11±6.375	t =-0.921	0.358

*Significant at level P<0.05

Table 3. Comparison of each component of beliefs between baseline (pretest) and one month after intervention (post test) (n=260).

Categories	Pretest	Post test	Mean	Within Group			Between Groups	
	mean±SD	mean±SD	Change	Test Value	P Value	Partial Eta Squared	Test Value	P Value
Susceptibility								
Group 1	11.81±2.982	14.19±2.694	2.38	F= 260.494	<0.001	0.672	X^2=46.637	<0.001
Group 2	11.55±3.187	12.55±3.275	1.00	F=49.406	<0.001	0.274		
Severity								
Group 1	17.88±1.607	18.91±1.111	1.03	F=102.981	<0.001	0.448	X^2=2.946	0.086
Group 2	17.61±1.759	19.08±0.941	1.47	F=91.388	<0.001	0.411		
Benefits								
Group 1	11.88±1.495	13.31±1.315	1.43	F=98.944	<0.001	0.438	X^2=1.151	0.283
Group 2	11.89±1.785	13.04±1.087	1.15	F=74695	<0.001	0.363		
Barriers								
Group 1	9.73±2.257	12.02±2.250	2.29	F=143.808	<0.001	0.531	X^2=1.261	0.261
Group 2	9.72±1.788	11.57±1.086	1.85	F=162.782	<0.001	0.554		
Efficacy								
Group 1	26.56±3.804	29.66±2.762	3.10	F=129.272	<0.001	0.504	X^2=0.044	0.834
Group 2	26.35±3.477	29.26±2.781	2.91	F=143.906	<0.001	0.523		
Total beliefs								
Group 1	77.86±6.812	88.09±6.980.	10.23	F=338.442	<0.001	0.727	X^2=2.300	0.129
Group 2	77.11±6.375	85.49±5.643	8.38	F=523917	<0.001	0.800		

*Significant difference at P<0.05

describes within and between group comparison of participants' mean changes in each component of beliefs from baseline to one month after intervention. Overall the results indicated that the teachers' beliefs at one month after intervention were significantly higher compared with baseline, in both groups. There was significant difference between groups in mean change of perceived susceptibility from baseline to one month after intervention (P<0.001). The positive mean change and partial eta squared of perceived susceptibility in group 1 were significantly higher than group 2, which were 2.38 and 0.672 compared with 1.00 and 0.274. There were no significant differences between groups in mean changes of perceived severity, benefits, barriers, efficacy, and total beliefs from baseline to one month after intervention (P value: 0.086, 0.283, 0.261, 0.834 and 0.129, respectively).

Discussion

The objective of this study was to evaluate the effects of educational intervention for teachers using a printed and electronic module on drug abuse prevention among junior high school students. The group 1 in this study received the educational intervention using an electronic module which has developed by the researchers. The group 2 received the usual printed module, which contained the same materials as the electronic module.

Based on findings of this study, all components of beliefs in both groups at one month after intervention were significantly increased compared to baseline condition before intervention. The only significant difference between electronic and printed module groups was in terms of increased perceived susceptibility, where in the electronic module group there was a significantly higher increase compared to the printed module group.

Similarly to these findings, Dusenbury *et al.*[11] carried out a study to examine the influence of training on teacher beliefs and perceptions about norm setting and student drug use. They found that there was a significant pretest-to-posttest improvement on teacher beliefs and perceptions for several items. There was a significant improvement in teachers expectations that students to not go on to use substances (t=3.391, p=0.001); all teachers better understood how to develop lesson plans for drug education (t=5.886, p<0.001); and finally all teachers had

marked improvement in their confidence to use norm setting in teaching (t=9.018, t<0.001). Our findings were also in line with a previous study which found that there was a significant correlation between knowledge on risk factors and the general score of attitude (r Pearson= 0.373, p < 0.001)[12]. This means that by giving specific knowledge, a person's attitude toward specific issues will be improved. Belief is a form of attitude.

Azwar[13] stated that media is one of the factors influencing the formation of a closed response. Media has a fundamental task in the delivery of information. Media provides information and messages that contain suggestions which will direct one's opinion. When strong enough, the messages brought by the information will provide an effective basis for judging things, so that certain beliefs are formed. In this study, the module which was used in both groups is described as learning media. This finding was also similar with that found by Mahmoodabad *et al.*[14], who concluded that there was significant improvement on health belief model components average scores among male students two months after receiving an educational intervention about preventive drug dependency in Iran.

According to the importance of alternative, more advanced methods in delivering drug prevention messages, this study was also relevant with Hansen *et al*. who studied about the impact of technological enhancements toward teachers' attitude in delivering drug abuse prevention program in U.S. This study revealed that teachers who used the technological enhancements found it easier to implement the program compare to others who delivered the program as usual. Furthermore, teachers' attitude about the program improved after experienced the enhancements and the majority of teachers wishing to continue using them in the future[15].

Conclusions

Educational intervention using electronic and printed module significantly increased teachers' beliefs in drug abuse prevention among students. The findings also indicated that in general both methods equally gave a positive effect on teachers' beliefs in preventing drug abuse. Therefore, both forms of delivery method of learning materials can be used as methods for teacher empowerment efforts in the prevention of drug abuse. The usual printed module was still effective and relevant to be used as learning media in drug abuse prevention, while the electronic module was an alternative that had some advantages in one category, and additionally is easy to carry everywhere, cheaper in production costs, durable, and environmentally friendly. To the best of our knowledge, there are not many studies that have evaluated the effectiveness of this module in the prevention of drug abuse especially on the target of teachers.

Data availability

Underlying data

Zenodo: Dataset, Module and Questionnaire of Teachers' Beliefs About Drug Abuse, http://doi.org/10.5281/zenodo.2546532[10]. Demographic data of participants is contained in 'DEMOGRAPHIC_DATA.xlsx'. Data of comparison of sociodemographic characteristics and participants' beliefs between study groups, within and between group comparison of beliefs changes is contained 'RAWDATA_VAR.xlsx'.

Extended data

Questionnaire used to assess teacher's beliefs about drug abuse prevention: http://doi.org/10.5281/zenodo.2546532[10].

Electronic/printed module used for the intervention: http://doi.org/10.5281/zenodo.2546532[10].

Acknowledgements

The authors would like to express the gratitude to the head of Balikpapan District Office of Ministry of Education who made it possible for the authors to conduct this study.

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Open Peer Review

Current Peer Review Status: ✔ ? ✔

Version 2

Reviewer Report 27 June 2023

https://doi.org/10.5256/f1000research.29535.r171520

✔ **Adama Grace Ngozi**
University of Nigeria, Nsukka, Enugu, Nigeria

The keywords should include the modules used in the experiment. Editorial work e.g. “who are using the drugs” instead of “those who using the drugs”.
Conceptualization of keywords are lacking such as drug abuse, adolescence, adolescent.

Under method, this is educational intervention using electronic and printed module to increase teachers’ beliefs in drug abuse prevention among students. This is a comparative study and there should be no need to be using a control group. It is just comparing two groups, one group using electronic and another using printed materials to know the effect of efficacy of one over the other.

Using pre-test and post-test is in order to help ascertain the effect of material used on the teachers.

Under sampling, only Balikpapan; the reason for selecting this state or town was not stated in the work because I know there may be other states or towns in Indonesia.

The APA referencing style should be uniform.

Is the work clearly and accurately presented and does it cite the current literature?
Partly

Is the study design appropriate and is the work technically sound?
Partly

Are sufficient details of methods and analysis provided to allow replication by others?
Yes

If applicable, is the statistical analysis and its interpretation appropriate?
Yes

Are all the source data underlying the results available to ensure full reproducibility?
Yes

Are the conclusions drawn adequately supported by the results?
Yes

Competing Interests: No competing interests were disclosed.

Reviewer Expertise: Early intervention in special education

I confirm that I have read this submission and believe that I have an appropriate level of expertise to confirm that it is of an acceptable scientific standard.

Reviewer Report 15 October 2020

https://doi.org/10.5256/f1000research.29535.r71575

William B. Hansen
Prevention Strategies, LLC, Browns Summit, NC, USA

I have no further comments on the article. The authors were responsive to my critique.

Is the work clearly and accurately presented and does it cite the current literature?
Yes

Is the study design appropriate and is the work technically sound?
Yes

Are sufficient details of methods and analysis provided to allow replication by others?
Yes

If applicable, is the statistical analysis and its interpretation appropriate?
Yes

Are all the source data underlying the results available to ensure full reproducibility?
Yes

Are the conclusions drawn adequately supported by the results?
Yes

Competing Interests: No competing interests were disclosed.

I confirm that I have read this submission and believe that I have an appropriate level of expertise to confirm that it is of an acceptable scientific standard.

Author Response 15 Oct 2020

Ghozali Ghozali

Thank you for your approval, Dr William B. Hansen

Competing Interests: No competing interests were disclosed

Version 1

Reviewer Report 14 July 2020

https://doi.org/10.5256/f1000research.19277.r66158

?

Manop Kanato
Department of Community Medicine, Khon Kaen University, Khon Kaen, Thailand

Although this article is interesting, minor revision is needed. UNODC world drug report is now 2020, reference WDR 2011 may be too old.
The article needs more details on the intervention and implementation process. Characteristics of the teacher should be taken into account in the analysis. Statistics regarding covariate need to be considered rather than paired and independent t-test.

Is the work clearly and accurately presented and does it cite the current literature?
Yes

Is the study design appropriate and is the work technically sound?
Yes

Are sufficient details of methods and analysis provided to allow replication by others?
Partly

If applicable, is the statistical analysis and its interpretation appropriate?
Partly

Are all the source data underlying the results available to ensure full reproducibility?
No source data required

Are the conclusions drawn adequately supported by the results?
Partly

Competing Interests: No competing interests were disclosed.

Reviewer Expertise: Drug abuse, Health behavior, Epidemiology, Policy evaluation, Preventive Medicine & Public Health

I confirm that I have read this submission and believe that I have an appropriate level of expertise to confirm that it is of an acceptable scientific standard, however I have significant reservations, as outlined above.

Author Response 10 Sep 2020

Ghozali Ghozali

Dear Dr Manop Kanato,

Thank you very much for reviewing our article and giving some great suggestions to make our article better. We have made corrections according to your suggestions and the revised article has also been uploaded.

- The first paragraph of the introduction was partly changed according to the newer reference of World Drug Report as suggested. The reference of World Drug Report has been changed to the 2020 version.
- The more detailed explanation in the study design especially to clarify the intervention and implementation process has been added according to the suggestion.
- Characteristics of the teachers analysis were not fully presented in this article because there were too many descriptions, so that the material was being prepared to be made in another separate publication article. This article is focused on the comparison of the effects between the electronic module and the printed module, table 1 on the comparison of the characteristics of teachers between group 1 and group 2 is intended to provide an illustration that in terms of the characteristics of teachers the two groups were comparable.
- The statistical data analysis has been improved according to suggestion. T test, Wilcoxon and Mann Whitney U tests have been replaced with repeated measure ANOVA and Kruskal Wallis Test. Tables 3 and 4 have been combined into table 3 which contains the results of statistical test comparisons within and between groups using repeated measure ANOVA and Kruskal Wallis Tests.

We sincerely hope that the improvements we have made can fulfill the suggestions you have given to make our article better.
Best regards

Competing Interests: No competing interests were disclosed.

Reviewer Report 15 March 2019

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William B. Hansen
Prevention Strategies, LLC, Browns Summit, NC, USA

- Correct this grammar:
  with the total number teacher who agreed to partake in the study being 133 teachers in the intervention group and 145 teachers in the control group.
  Should be:
  with the total number of teachers who agreed to partake in the study being 133 teachers in the intervention group and 145 teachers in the control group.
- With a nested design, teachers within schools and schools being assigned to condition, the required number of teachers needed would be greater than the number apparently calculated. I suggest software such as Optimal Design.
  https://www.theanalysisfactor.com/sample-size-randomized-trials/
- Only one alpha coefficient is reported but it is apparent that there are five subsclasses. Coefficients should be calculated for each separately, unless there is statistical evidence that they all load on one factor. No such evidence is provided. I appreciate that the questionnaire was made available.
- It is not clear if a pre-test and post-test were given, or if just a post-test was given. It sounds like there might have been a pre-test (baseline is mentioned), but it is not clear.
- Significance should be $p<.05$, not 95% (this was correctly noted in the tables, but not in the narrative).
- The data presented in Table 3 is very promising; however, a one-way ANOVA with repeated measures or MANOVA would have been a more appropriate analytic method. Also, it is a bit bothersome to have t values presented some of the time and Z values the rest of the time. If consistency cannot be maintained, it should be explained.
- Tables 3 and 4 present results that could be combined.
- The second paragraph of the discussion includes a wordy rehash of the results paragraph about the same topic. I think the discussion should focus more on interpretation of results.
- There really is not a treatment and a control group. Both sets of teachers are exposed to an intervention; therefore, both groups are treatment groups. They are just different in the format with which they received training. There really is no control group and it is misleading to call the group that received paper instruction as such. I would change the title of the paper to fit this reality.

Is the work clearly and accurately presented and does it cite the current literature?
Partly

Is the study design appropriate and is the work technically sound?
Yes

Are sufficient details of methods and analysis provided to allow replication by others?

Yes

If applicable, is the statistical analysis and its interpretation appropriate?
Partly

Are all the source data underlying the results available to ensure full reproducibility?
Yes

Are the conclusions drawn adequately supported by the results?
Partly

Competing Interests: No competing interests were disclosed.

Reviewer Expertise: drug prevention

I confirm that I have read this submission and believe that I have an appropriate level of expertise to confirm that it is of an acceptable scientific standard, however I have significant reservations, as outlined above.

Author Response 03 Apr 2019

Ghozali Ghozali

Thank you so much for your review and your suggestions. We will make some corrections and explanations based on your suggestions. The corrections will be in our revised article. Some explanations are below:

- The number of teachers recruited in each group has considered the design effect and attrition rate. Based on the minimum sample calculation, the minimum number of samples was 46 per-group, considered the design effect then the number multiplied by 2 to 92 people per-group. Taking into account the attrition rate of 20%, the number of samples was 115 per-group. The actual number of samples recruited at the initial stage was 133 people in group 1 and 145 people in group 2 (greater than the optimum sample size, 115).
- Questionnaire was available at https://zenodo.org/record/2542702#.XKOtEuszYTE
- A pre-test and post-test were given. We mean baseline measurement of variables as a pre-test. Anyway, we will make correction in the narrative.
- We did not use ANOVA or MANOVA since there was only two groups and two times measurement of dependent variable. The t and Z values were retained in table 3 because of the different statistical tests used. The t value was obtained from the paired-t test (parametric) , while the Z value of the Wilcoxon signed rank test (non-parametric). However, we will accommodate suggestions for combining tables 3 and 4 in the revised article.

Competing Interests: No competing interests were disclosed

Author Response 10 Sep 2020

Ghozali Ghozali

Dear Dr William B. Hansen,

Thank you so much for reviewing our article and giving us some great suggestions. We have carefully considered all your comments and suggestions and we have accommodated them in the revised version of the manuscript we have uploaded. The points of explanation and updates are as follows:

- The grammar of the third paragraph in the section of study participants has been corrected according to the suggestion.
- This study has used a sample size larger than the number apparently calculated. The results of the minimum sample calculation in this study according to the formula and added with the attrition rate were 115 teachers per group or 230 teachers for two groups. The actual number of respondents in this study was 128 for group 1 and 132 for group 2.
- The alpha coefficients have been added for each of the five subclasses of beliefs, as suggested
- In the study design section, there has been made clear that the “pretest” is referred to as “baseline” conditions.
- Significance level in the narrative of data analysis section has been corrected to $P < 0.05$
- Tables 3 and 4 have been combined into table 3, following the suggestion. Paired t and Wilcoxon tests have been changed with repeated measure ANOVA, so that the statistical values have also been adjusted and consistent. The description of table 3 in the results section has been updated
- The second paragraph in the discussion has been improved, focusing more on the interpretation of the results.
- We agreed with the comment that both groups in our study are treatment groups. The title of manuscript was updated by adding “and printed”. The words of “intervention group” and “control group” have been changed to “group 1” and “group 2” in the whole of the manuscript.

We sincerely hope that the responses and revisions that we have made can fulfill the suggestions that you have provided to make our article better.
Best regards.

Competing Interests: No competing interests were disclosed