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ARTICLE DETAILS

TITLE (PROVISIONAL)	Job satisfaction, work commitment, and intention to leave among pharmacists: a cross-sectional study
AUTHORS	Al-Muallem, Nedaa; Al-Surimi, Khaled

VERSION 1 – REVIEW

REVIEWER	Zaid Al-Hamdan Faculty of Nursing Jordan University of Science and Technology Irbid-Jordan
REVIEW RETURNED	11-Nov-2018

GENERAL COMMENTS	Thank you for this effort. the objectives should be clear and specific. In one part you mentioned this study aims to evaluate the Saudia Pharmacist and in another part, you mentioned pharmacist working in SA please be clear what is your study group. the discussion part needs more attention.

REVIEWER	Zhou Ping School of Public Health, Fudan University, P.R. China
REVIEW RETURNED	26-Nov-2018

GENERAL COMMENTS	Thanks for the opportunity to review this manuscript. The authors investigated the job satisfaction, work commitment, and intention to leave among pharmacists working in different health-care settings in Saudi Arabia in order to find the determinants or associations related to them. It is true that pharmacists are indispensable part of health manpower and have become more clinically involved in patient care nowadays. It is import to understand the current status of job satisfaction, work commitment, and job turnover of pharmacists and clarify the relevant effect factors. I think this paper was very interesting and I have also learnt a lot from it. I have some questions and suggestions below which are offered to authors to consider. 1. This manuscript focused on pharmacists in different health-care settings in Saudi Arabia. And in the first paragraph of the background, the author indicated that pharmacists have become more clinically involved in patient care at many points in health-care system and the health-care system need for more qualified pharmacists. Could the author give more information about pharmacists' roles and works in various kinds of healthcare institutions in Saudi Arabia? What are the differences of pharmacists' job contents, job duties et al. among various kinds of healthcare settings? Because I noticed that the one of top three

significant factors affecting the respondents' likelihood to stay in their current jobs was place of practice.

2. P7, lines 5-12. The authors stated that they calculated the required sample size by using a online sample calculator. Then what the exact pre-test probability did they refer to? What kind of people's probability, what indicators' probability, job satisfaction, work commitment or intention to leave?

3. P7, line 16. The authors stated the sent questionnaire to all 515 pharmacists. However, they pointed out 325 of 1565 pharmacists completed the questionnaire in P8, line 8. I was confused how many people did the authors exactly survey?

4. P7, line 14-17. The authors said they sent a questionnaire to the respondents. How did they collected the questionnaires? The respondents send the questionnaire back?

5. P14, line 9. It should be "in Table 4" instead of "in Table 5".

6. P14, line 13. It should be "in Table 5" instead of "in Table 6".

7. P14, table 4. I noticed some interesting results. In line 49, compared to the group of pharmacists' likelihood to stay in their current job, there was more percentage with month income above 15000 in the group of respondents' unlikelihood to stay. In P15, line 32, it was also higher proportion of pharmacist managers/supervisors among the group of respondents' unlikelihood to stay. Why?

8. P15, lines 20-22. Could the authors give more explanation on what the difference of pharmacists' job duties and contents when they work in community pharmacy, primary care center, or industrial companies, academic/university separately? And the results showed that place of practice was the significant factor to job satisfaction, work commitment, and respondents' likelihood to stay. What were the possible reasons to explain these findings?

9. This study found that the pharmacists surveyed were satisfied with their jobs, but at the same time, they expressed a desire to leave their current positions. This was very interesting result. I noticed that the author indicated further research was required to clarify this issue. But from the author's point of view, I really wonder, what the possible explanations are.

REVIEWER	Patrick Hardigan Nova Southeastern University, USA
REVIEW RETURNED	12-Mar-2019

GENERAL COMMENTS	An interesting paper. Some minor statistical modifications are necessary. Why did the authors not use structural equation modeling? Background • Well presented. • Update the introduction with references to turnover among other health professionals in Saudi Arabia. Differences in the organization and structure in Saudi Arabia's health care system may indicate differences.

	Methods
	• Well presented and appropriate.
	Analysis
	• Why not use the entire job satisfaction scale in the model (e.g., use a structural equation modeling approach)? Instead a global measure was used. Why even include the job satisfaction scale at all?
	• How was work commitment measured? Was it the overall average to all of the questions? This is not clear.
	• Consistent with decimal places in tables. Use one decimal with percentages and three with p-values.
	• I feel that the percentages for Table 4 should be row-wise. That is, what percentage of males are unlikely or likely to stay. As presented it is difficulty to say with column-wise percentages.
	• With small sample sizes such as Table 4, current position where you have 0 pharmacy owners willing to leave, the authors should run exact tests (e.g., Fisher). This must be reanalyzed.
	• Table 5, with only three owners the statistics cannot be correct. I suggest that pharmacy owners should be included in the other category.
	• I find it hard to believe given the small samples that the authors had enough data to use all of the categorical variables in the regression model. For example, how many single males, with a bachelor degree working < 35 hours, part-time, at an industrial company, with > 20 years of practice as a pharmacy manager are there?
	• Interesting that most pharmacists were satisfied (63%) but also were intending to leave their job (62%). Yet, the regression model shows us that as satisfaction increases, intention to leave decreases. Please clarify.
	Conclusion
	• Appropriate and limited to the findings in the paper.

VERSION 1 – AUTHOR RESPONSE

Reviewer: 1
Reviewer Name: Zaid Al-Hamdan
Institution and Country: Faculty of Nursing, Jordan University of Science and Technology, Irbid-Jordan

Thank you for this effort.
The objectives should be clear and specific. In one part you mentioned this study aims to evaluate the Saudia Pharmacist and in another part, you mentioned pharmacist working in SA please be clear what your study group is.

Reply: Actually, the main study subjects were the pharmacists working in Saudi Arabia not only limited to Saudi pharmacist, so this confusion has been corrected throughout the manuscript

Reviewer: 2
Reviewer Name: Zhou Ping
Institution and Country: School of Public Health, Fudan University, P.R. China

Reviewer's report
Title: Assessment of job satisfaction, work commitment, and intention to leave among pharmacists in Saudi Arabia: a cross-sectional study
Date: 24 Nov. 2018
Reviewer: Ping Zhou
Thanks for the opportunity to review this manuscript. The authors investigated the job satisfaction, work commitment, and intention to leave among pharmacists working in different health-care settings in Saudi Arabia in order to find the determinants or associations related to them. It is true that pharmacists are indispensable part of health manpower and have become more clinically involved in patient care nowadays. It is import to understand the current status of job satisfaction, work commitment, and job turnover of pharmacists and clarify the relevant effect factors. I think this paper was very interesting and I have also learnt a lot from it.
I have some questions and suggestions below which are offered to authors to consider.

Reply: Thanks for your nice comments, and rest assured that all your valuable comments have been addressed point by point as follows:

1. This manuscript focused on pharmacists in different health-care settings in Saudi Arabia. And in the first paragraph of the background, the author indicated that pharmacists have become more clinically involved in patient care at many points in health-care system and the health-care system need for more qualified pharmacists. Could the author give more information about pharmacists' roles and works in various kinds of healthcare institutions in Saudi Arabia? What are the differences of pharmacists' job contents, job duties et al. among various kinds of healthcare settings? Because I noticed that the one of top three significant factors affecting the respondents' likelihood to stay in their current jobs was place of practice.
Reply: Your comments have been addressed by adding a paragraph in the background section elaborating the pharmacists' roles and works in various kinds of healthcare institutions in Saudi Arabia, see page 4, line 5-10.

2. P7, lines 5-12. The authors stated that they calculated the required sample size by using a online sample calculator. Then what the exact pre-test probability did they refer to? What kind of people's probability, what indicators' probability, job satisfaction, work commitment or intention to leave?
Reply: The expected outcome were set at probability of 50% for all main outcomes: job satisfaction, work commitment or intention to leave

3. P7, line 16. The authors stated the sent questionnaire to all 515 pharmacists. However, they pointed out 325 of 1565 pharmacists completed the questionnaire in P8, line 8. I was confused how many people did the authors exactly survey?
Reply: Thanks for this comment. The correct number is 515 so the numbers have been corrected throughout the revised manuscript.

4. P7, line 14-17. The authors said they sent a questionnaire to the respondents. How did they collected the questionnaires? The respondents send the questionnaire back?
Reply: Your comment have been addressed in the revised version, p8, line 7-10 by adding this statement "The questionnaires were sent to respondents as online Survey Monkey via their validated emails list provided by Saudi Commission for Health Specialties in Riyadh", and at end of survey, this was a link to submit and send back the completed survey.

5. P14, line 9. It should be "in Table 4" instead of "in Table 5".
Reply: Agree, and changed accordingly
6. P14, line 13. It should be "in Table 5" instead of "in Table 6".
Reply: Agree, and changed accordingly

7. P14, table 4. I noticed some interesting results. In line 49, compared to the group of pharmacists' likelihood to stay in their current job, there was more percentage with month income above 15000 in the group of respondents' unlikelihood to stay. In P15, line 32, it was also higher proportion of pharmacist managers/supervisors among the group of respondents' unlikelihood to stay. Why?
Reply: Among the possible explanation could be that income and position are not necessarily the only reasons to make you satisfied or to stay on your job. We think among the possible explanations might be the feeling lack of job security and absence of well-articulated staff retention policy, especially nowadays where there is a national policy called saudization aim at replacing expatriate with the locals

8. P15, lines 20-22. Could the authors give more explanation on what the difference of pharmacists' job duties and contents when they work in community pharmacy, primary care center, or industrial companies, academic/university separately? And the results showed that place of practice was the significant factor to job satisfaction, work commitment, and respondents' likelihood to stay. What were the possible reasons to explain these findings?
Reply: Thanks for this comments. The core job and duties of the pharmacists are the same; however, the pharmacist working on community pharmacy might play more role in counseling patient while in hospital pharmacy the role will be more in advising physicians about the appropriate therapeutic dose and drug-related problems such as drug-drug interactions as part of medical team, please see background section, Page 4, line 5-10.

9. This study found that the pharmacists surveyed were satisfied with their jobs, but at the same time, they expressed a desire to leave their current positions. This was very interesting result. I noticed that the author indicated further research was required to clarify this issue. But from the author's point of view, I really wonder, what the possible explanations are
Reply: We think among the possible explanation might be lack of job security feeling and absent of clear staff retention policy and practice , especially nowadays where there is a national policy called saudization i.e. replacing expatriate with the locals

Reviewer: 3
Reviewer Name: Patrick Hardigan
Institution and Country: Nova Southeastern University, USA
See comments in file attached (bmjopen-2018-024448-review.pdf)
An interesting paper. Some minor statistical modifications are necessary. Why did the authors not use structural equation modeling?

Background
• Well presented.
Reply: Thanks

• Update the introduction with references to turnover among other health professionals in Saudi Arabia. Differences in the organization and structure in Saudi Arabia's health care system may indicate differences.
Reply: Thanks for this valuable suggestion. Although number of previous studies on intention to leave among other health professionals in Saudi Arabia Saudi context is limited , we added couple of relevant available studies conducted on primary care nurses and physicians, see please see page 8, line 20-28.

Methods
• Well-presented and appropriate.
Reply: Thanks

Analysis
• Why not use the entire job satisfaction scale in the model (e.g., use a structural equation modeling approach)? Instead a global measure was used. Why even include the job satisfaction scale at all?
Reply: Thanks for this valuable comments. Regarding the structural equation modeling approach, I would like to clarify that this study was based on simple convenience sample that does not include complex study design such as clusters or multistage sampling that might justify using the structured equation modeling as suggested by the reviewer. Therefore, we believe using the multi-variable logistic regression will be enough and appropriate to be used to identify the potential predictors of the outcome (intention to leave) since the main outcome is simple dichotomous variable (Yes or no). so, In multi-variable logistic regression we aimed to explore if there is a significant association between job satisfaction and/ or work commitment on the outcome " intention to leave", with controlling the significant association of respondents' work related variables with the "intention lo leave" that found in the uni-variate analyses stage.

• How was work commitment measured? Was it the overall average to all of the questions? This is not clear.
Reply: Yes, it was the overall average score for all of related questions

• Consistent with decimal places in tables. Use one decimal with percentages and three with p-values.
Reply: Agree and fixed in the throughout revised version

• I feel that the percentages for Table 4 should be row-wise. That is, what percentage of males are unlikely or likely to stay. As presented it is difficult to say with column-wise percentages.
Reply: Thanks for this comments. Actually we are not comparing among males who are unlikely or likely to stay, we are interested to compare between males versus females, this is why we used the column-wise percentage

• With small sample sizes such as Table 4, current position where you have 0 pharmacy owners willing to leave, the authors should run exact tests (e.g., Fisher). This must be reanalyzed.
Reply: Agree, we run the exact fisher tests

• Table 5, with only three owners the statistics cannot be correct. I suggest that pharmacy owners should be included in the other category.
Reply: agree, and the "pharmacy owners" has been added to the group of "others"

• I find it hard to believe given the small samples that the authors had enough data to use all of the categorical variables in the regression model. For example, how many single males, with a bachelor degree working < 35 hours, part-time, at an industrial company, with > 20 years of practice as a pharmacy manager are there?
Reply: Thanks for this valuable comments. we rerun the regression model by including in the multivariate the only variables that were significant in the univariate analysis stage i.e., only 3 categorical variables were included in the final multiple regression model so we think by limited the number of independent categorical variables, the regression model will be good enough to identify the signification predictors, please new Multiple logistic regression analysis, page 19-20.

• Interesting that most pharmacists were satisfied (63%) but also were intending to leave their job (62%). Yet, the regression model shows us that as satisfaction increases, intention to leave decreases. Please clarify.

Reply: As the regression model shows that although improving satisfaction level will decrease significantly intention to leave, there are other unknown factors need to be exploded apart form job satisfaction and work comments as possible factors for intention to leave among pharmacists working

in Saudi Arabia, such as job security, retention policy, engagement and empowerment , among others pharmacists. This is way we recommended for further studies to explore the reasons why pharmacists in Saudi Arabia has intention to leave even though are satisfied with their work.

Conclusion
• Appropriate and limited to the findings in the paper.
Reply: Thanks

VERSION 2 – REVIEW

REVIEWER	Patrick Hardigan Nova Southeastern University, USA
REVIEW RETURNED	13-May-2019

GENERAL COMMENTS	The authors failed to address the following comments, and I cannot recommend publication if they are not resolved: With small sample sizes such as Table 4, current position where you have 0 pharmacy owners willing to leave, the authors should run exact tests (e.g., Fisher). This must be re-analyzed. Table 5, with only three owners the statistics cannot be correct. I suggest that pharmacy owners should be included in the other category. I find it hard to believe given the small samples that the authors had enough data to use all of the categorical variables in the regression model. For example, how many single males, with a bachelor degree working < 35 hours, part-time, at an industrial company, with > 20 years of practice as a pharmacy manager are there?

VERSION 2 – AUTHOR RESPONSE

Reviewer: 3
Reviewer Name: Patrick Hardigan
Institution and Country: Nova Southeastern University, USA
Please state any competing interests or state 'None declared': No Conflicts

The authors failed to address the following comments, and I cannot recommend publication if they are not resolved:

Reply: We have addressed the said reviewer's comments in the last reply but it seems it was not clear enough to satisfy the reviewer, so we are more than happy to address them again.

- Reviewer's comment #1: With small sample sizes such as Table 4, current position where you have 0 pharmacy owners willing to leave, the authors should run exact tests (e.g., Fisher). This must be re-analyzed.

Reply: Totally agree in case of 0 expected frequency we should use exact tests (e.g., Fisher), but we tried first regrouped the categories, as the reviewer suggesting by adding the "pharmacy owners" category into the category of "others" and by this we eliminated the 0 frequency and then re-analyzed the data using the chi-square, see the results in the revised version Table 4, Page 16.

-Reviewer's comment #2: Table 5 with only three owners the statistics cannot be correct. I suggest

that pharmacy owners should be included in the other category.

Reply: Agree and done as suggested so the "pharmacy owners" has been added to the group of "others"

-Reviewer's comment #3: I find it hard to believe given the small samples that the authors had enough data to use all of the categorical variables in the regression model. For example, how many single males, with a bachelor degree working < 35 hours, part-time, at an industrial company, with > 20 years of practice as a pharmacy manager are there?

Reply: You are right, in this case what we have done is prior to run the multivariate regression analysis, we run the univariate analysis first to identify and exclude the non-significant categorical variables ending up with only 4 significant categorical variables to be included in the multivariate regression model. These variable were "Monthly income", "Place of pharmacy practice", "Years of practice" and Current position" so we think by this the requirements of the multivariate regression model in terms of sample size were met in order to run the model and identify any significant predictors among respondents characteristics on 'intention to leave' among pharmacists. What we found in the end is that the Multiple logistic regression analysis showed that the most important predictors of pharmacists' intentions to leave were related to job satisfaction and work commitment (OR=0.923; 95% CI= (0.899–947); p <0.001 and OR=1.044; 95% CI= (1.014–1.08); p=0.004, respectively), whereas all respondents' demographic characteristics had no effect, please see the new Multiple logistic regression analysis, Table 6, page 19-20.

We hope that our answers will satisfy the editor as well as the reviewers expectation, and looking forward to hearing from you soon