

EFFECT OF EDUCATIONAL INTERVENTION ON PHYSICIANS AND RESEARCHERS' KNOWLEDGE, PRACTICES AND PERCEPTIONS TOWARDS PREDATORY JOURNALS (PJs)

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Keywords

Illegitimate journal, questionable journals, predatory journals, educational intervention, tertiary care hospital

Background

In the current scholarly landscape, predatory journals (PJs) increasingly emerged along with open access journals (OAJ). These PJs have rapidly increased the volume of their publications over time, from approximately 53,000 articles in 2010 to approximately 420,000 articles in 2014 (Shen and Bjork, 2015). The primary aim of PJs is for profit rather than to disseminate quality and peer-reviewed research and thus hurt accurate and good scientific research. Although several efforts have

been put in place to expose PJs, which have compromised the integrity of scientific research by exploiting the open-access publication model, some authors are still not aware of these journals. Many prospective authors and researchers are unaware of these PJs. In the Middle Eastern countries, there was a large body of literature shows that prospective authors are commonly invited to publish in PJs (Mouton & Valentine, 2017; Watson, 2017).

Objectives

The main purpose of the current study is to assess the impact of an educational intervention on the physicians' and researchers' knowledge,

practices, and perceptions towards PJs at a tertiary care hospital.

Methodology

This is a quasi-experiment randomized pretest-posttest control group design. The study

population consisted of physicians and researchers at a tertiary care hospital. and all

researchers identified in the database of the institutional review board (IRB) were eligible to participate in this study. The study participants were randomly assigned either to an intervention group or a control group. The intervention was performed in a way that participants in the intervention group received educational training regarding PJs and those in the control group did not. The educational training included video lectures and written materials that cover issues related to predatory journals, available lists, organizations that tackle PJs, ways and suggested features to identify potential PJs, criteria for identification of PJs, and how to avoid them. The participants were recruited into the study voluntarily, and invited to participate in this study by a trained research coordinator after they have read, understood, and signed written informed consent.

A structured questionnaire for assessing knowledge, practices, and perceptions towards PJs was developed based on previously published studies (Christopher & Young, 2015; Shen & Bjork, 2015; Beshyah SA. et al, 2018), and the face and content validity was checked by a group of ten academic and clinical researchers from different countries with expertise in research integrity and publication ethics. Then, a pilot study was carried out on 40 participants to ensure the clarity and readability of the questionnaire and it was modified according to the participants' comments.

The questionnaire consisted of four parts (i.e., demographic, knowledge, practices, and perceptions). The demographic parts consisted of age, gender, years of experience, professional occupation, workplace, prior training, training location, and the number of published articles either as co-author or corresponding author. The knowledge part consisted of 16 items. The responses for knowledge questions were assessed using (yes, no, not sure) choices. The

knowledge questions are: have you ever heard of PJs; what is PJs; have you ever heard of the lists that tackle PJs; have you ever heard of the lists that provide a list of the legitimate journal; what are the ways to identify potential PJs; and what suggested features would you look for to identify PJs. The total knowledge score was calculated for those who correctly answered each item (i.e., yes) summed to possible maximum and minimum scores of 16 and 0 points, respectively. The practices part consisted of 19 items (17 items graded on a 4-points Likert scale and 2 items for multiple answers). The questions are; have you ever submitted articles to suspected PJs; do you have publications in suspected PJs; have you ever accepted the invitation as a reviewer or editorial board member for what sounds to you like a PJ; and have you ever checked the details of a target journal before submitting your manuscript?. Also, the part of the practice consisted of 2 multiple choice questions; why do you publish in PJ? and what do you personally do when you get invited to publish, review or serve on the editorial board for what sounds to you like a PJ. The total practices score was calculated by adding all the 17 items responses with possible minimum and maximum scores of 17 to 68 points, respectively. The perception part consisted of 10 items measured using a 5-points Likert scale of "strongly disagree" to "strongly agree". The total perception score was calculated by adding all items with possible minimum and maximum scores of 10 and 50 points, respectively. The research team distributed the questionnaire to potential participants before and after intervention commenced. The analysis of covariance (ANCOVA) was performed to assess the effect of the intervention program on participants' knowledge, practices, and perceptions.

Results

A total of 304 participants enrolled in the study at baseline and were distributed equally in intervention and control groups (152 per each). After the intervention, the intervention group lost 67 participants and did not complete the questionnaire, leaving 85 participants for the

post-intervention final analysis. The control group lost 54 participants after the intervention. Of all participants, 153 (50.3%) were males, 111 had Bachelor degrees (36.5%), 81 senior consultants (26.6%), 93 worked in the main hospital (30.6%), 42 received prior training

(13.8%) and 24 (57.7%) of them were in Arab institutions. The majority of them had published at least 5 manuscripts either as co-author (274; 90%) or corresponding authors (290; 95.4%). The distributions of baseline characteristics were similar in both groups ($p > .05$). Furthermore, pre-test intervention means total scores of knowledge (5.32 ± 3.8 versus 5.42 ± 3.9 , $p > .05$), practices (39.48 ± 11.0 versus 38.73 ± 12.4 , $p > .05$), and perceptions (32.36 ± 5.1 versus 32.74 ± 4.8 , $p > .05$) were not statistically different in both groups. The most important result to emerge from this study is that

Conclusions

This study showed that the educational intervention program had significantly improved participants' knowledge but neither their practices nor perceptions. However, despite the significant increase in post-intervention total knowledge score is still somewhat moderate. Therefore, the threat of PJs needs to be further discussed and illustrated for many researchers. This can be done, for example, by the development of new educational or training

participants' knowledge of PJs was significantly improved and increased in both groups such that the intervention group exhibited higher post-intervention scores (9.41 ± 3.6) as compared to the control group (7.53 ± 3.7 ; $p < .001$) after adjusting for pre-intervention total knowledge scores. However, the intervention program did not significantly contribute to improving the post-intervention mean total scores of participants' practices (43.18 ± 11.1 versus 41.39 ± 11.0 , $p > .05$) and perceptions (32.71 ± 4.5 versus 33.41 ± 3.8 , $p > .05$).

programs and strategies to differentiate between scientifically accurate and PJs. Awareness camping must be taken into consideration to increase the authors' and researchers' awareness about the negative consequences of these journals on the credibility of science and evidence-based practice. Furthermore, long-term follow-up studies are needed to disseminate and stimulate better results.

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