

Winner

Predictors of Manuscript Rejection sYndrome (MiSeRY): a cohort study

Hui-Chen Han^{1*}, Anoop Ninan Koshy^{1*}, Tina Lin¹, Matias Yudi¹, David Clark¹, Andrew W Teh^{1,2}, Omar Farouque¹

The known: Despite the ubiquitous nature of manuscript rejection, little is known about the associated Manuscript Rejection sYndrome (MiSeRY).

The new: With great expectations comes the potential for great MiSeRY. Independent predictors of MiSeRY were first author status, high pre-submission expectations, and external review of manuscripts.

The implications: To alleviate MiSeRY, we recommend that first authors master the Coping and reLaxing Mechanisms (CaLM) of senior colleagues, that authors temper their expectations by familiarising themselves with journal acceptance rates, and that journal editors judiciously select the manuscripts they send for external review.

A 34-year-old cardiology fellow confided to a colleague that he had been experiencing feelings of anger and low mood. Earlier that day, the fellow was seen shaking his head in disbelief while reading (and carefully re-reading) a decision letter. His colleague identified that these symptoms were consistent with the Manuscript Rejection sYndrome (MiSeRY).

MiSeRY is increasingly prevalent in the academic and medical communities. Higher numbers of medical graduates undertaking doctoral studies, combined with low manuscript acceptance rates by leading medical journals, are contributing factors.^{1,2} Empirical findings have suggested that symptoms experienced by those with MiSeRY closely mirror the Kübler-Ross stages of grief.^{3,4} However, the length of time between “denial” and “acceptance” during manuscript rejection is highly variable.

We therefore examined the time course of grief during manuscript rejection as experienced in a tertiary academic centre, and assessed whether specific factors are predictive of prolonged grief: that is, MiSeRY.

Methods

Participant selection

Participants in this single centre cohort study were academic physicians in the cardiology department of a tertiary institution. The primary inclusion criterion was publishing more than five research manuscripts during the preceding 5 years.

Data collection

Participants reported (in self-administered questionnaires) grief duration for full article manuscripts rejected at least once during the past 5 years (maximum of five manuscripts). Only submissions on which the participants were either the first or senior author were included. Grief duration was defined as the time from first viewing the decision letter to ultimate “acceptance” of

Abstract

Objectives: To assess whether specific factors predict the development of Manuscript Rejection sYndrome (MiSeRY) in academic physicians.

Design: Prospective pilot study; participants self-administered a questionnaire about full manuscript submissions (as first or senior author) rejected at least once during the past 5 years.

Setting: Single centre (tertiary institution).

Participants: Eight academic physician-authors.

Main outcome measures: Duration of grief. MiSeRY was pre-specified as prolonged grief (grief duration longer than the population median).

Results: Eight participants provided data on 32 manuscripts with a total of 93 rejections (median, two rejections per manuscript; interquartile range [IQR], 1–3 rejections per manuscript). Median age at rejection was 37 years (IQR, 33–45 years); 86% of 80 rejections involved male authors (86%), 56 of the authors providing data about these rejections were first authors (60%). The median journal impact factor was 5.9 (IQR, 5.2–17). In 48 cases of rejection (52%), pre-submission expectations of success had been high, and in 54 cases (58%) the manuscripts had been sent for external review. Median grief duration was 3 hours (IQR, 1–24 h). Multivariate analysis indicated that higher pre-submission expectation (adjusted odds ratio [aOR], 5.0; 95% CI, 1.5–18), first author status (aOR, 9.5; 95% CI, 1.1–77), and external review (aOR, 19.0; 95% CI 2.9–126) were independent predictors of MiSeRY.

Conclusions: To help put authors out of their MiSeRY, journal editors could be more selective in the manuscripts they send for external review. Tempering pre-submission expectations and mastering the Coping and reLaxing Mechanisms (CaLM) of senior colleagues are important considerations for junior researchers.



* Equal first authors, who conceived the study after Hui-Chen Han received the 11th rejection for a particular manuscript. If this manuscript is rejected, Hui-Chen Han and Anoop Ninan Koshy will share in the MiSeRY. Omar Farouque probably won't care because of his enhanced CaLM.

the decision (in hours). Grief duration exceeding the study population median was defined as MiSeRY.

Potential predictors of MiSeRY were specified a priori, including objective factors such as journal impact factor, the submission number for the manuscript, authorship status, whether the manuscript was externally reviewed, and time from submission to decision (in weeks). The subjective level of pre-submission expectation about the likelihood of manuscript acceptance was also ascertained.

Finally, two investigators (H-CH, ANK) undertook further discussions with participants, collating key sentiments that captured the spirit of MiSeRY.

Statistical analysis

Continuous data are presented as medians with interquartile ranges, categorical data as absolute numbers and percentages. Linear relationships between continuous variables were assessed (Pearson correlation coefficient), and relationships of MiSeRY with the identified parameters were examined by univariate and multivariate logistic regression; we report adjusted odds ratio (aORs) with 95% confidence intervals (CIs). Goodness-of-fit of logistic regression was assessed with the Hosmer–Lemeshow test. $P < 0.05$ (two-sided) was deemed statistically significant. All data were analysed in SPSS 25 (IBM).

Ethics approval

This study was approved by the institutional review board at Austin Health, and all study participants provided verbal consent.

Results

Eight participants provided data on 32 manuscripts that had received a total of 93 rejections (range, 1–11 rejections per article;

1 Baseline demographic characteristics for the 93 manuscript rejections

Characteristic	
Age of eight participants (years), median (IQR)	37 (33–45)
Sex	
Men	80 (86%)
Women	13 (14%)
Author status	
First author	56 (60%)
Senior author	37 (40%)
Journal impact factor, median (IQR)	5.9 (5.2–17)
Submission number, median (IQR)	2 (1–3)
Pre-submission expectations	
High	48 (52%)
Low	45 (48%)
External review	
Sent for external review	54 (58%)
Rejected without external review	39 (42%)
Decision duration (weeks), median (IQR)	4 (1–6)
Grief duration (hours), median (IQR)	3 (1–24)

IQR = interquartile range. ♦

2 Univariate predictors of MiSeRY

Characteristic	Odds ratio (95% CI)	P
Age	0.99 (0.95–1.03)	0.55
Sex (man)	0.38 (0.11–1.34)	0.12
First author	3.22 (1.35–7.71)	0.008
Journal impact factor	1.00 (0.97–1.03)	0.80
Submission number	0.95 (0.78–1.17)	0.63
Pre-submission expectations (high)	5.42 (2.23–13.2)	< 0.001
Sent for external review	4.69 (1.91–11.5)	< 0.001
Decision duration	1.24 (1.07–1.44)	0.004

CI = confidence interval. ♦

median, two rejections/manuscript; interquartile range [IQR], 1–3 rejections) (Box 1). No correlation with grief duration was evident for author age ($r = 0.06$, $P = 0.56$) or journal impact factor ($r = 0.11$, $P = 0.32$).

Significant univariate predictors of MiSeRY were submission as first author, high pre-submission expectation, manuscript sent for external review, and longer decision duration (each $P < 0.01$; Box 2).

In the multivariate analysis, manuscript sent for external review (OR, 19.0; 95% CI, 2.9–126), first author status (OR, 9.6; 95% CI, 1.1–77.4), and a high pre-submission expectation for acceptance (OR, 5.0; 95% CI, 1.4–17.6) were found to be independent predictors of MiSeRY (Box 3).

Sentiments that captured the spirit of MiSeRY corresponded to the various stages of grief as described by Kübler-Ross (Box 4).

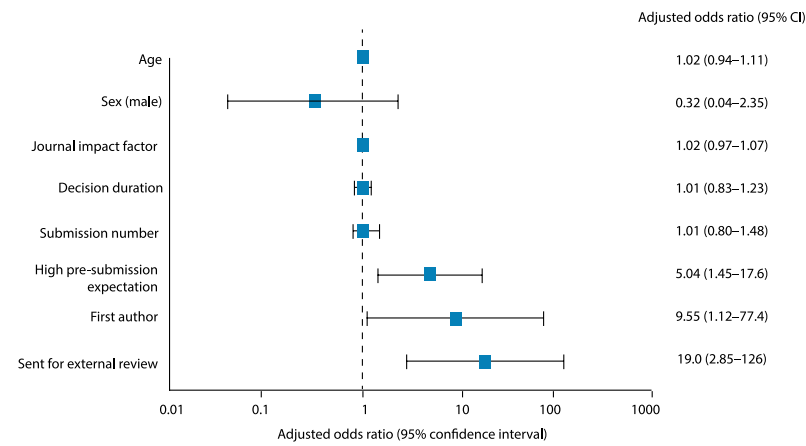
Discussion

We found that MiSeRY was significantly more likely for first authors of rejected manuscripts that had been sent for external review and for which authors had high pre-submission expectations of acceptance. Age, sex, journal impact factor, submission number, and decision duration were not significant predictors of MiSeRY.

Our findings suggest that with great expectations comes the potential for great MiSeRY. Manuscripts associated with high pre-submission expectations and sent for external review were associated with increased MiSeRY when rejected. This was especially true for first authors, who are not only more personally invested in the reported research but must also bear the burden of re-formatting the manuscript for the next submission. Further, we hypothesise that senior authors, who have undoubtedly encountered MiSeRY during their formative research years, may have developed enhanced Coping and reLaxing Mechanisms (CaLM) that guard against a potential state of permanent MiSeRY.

While longer decision times were associated with greater MiSeRY in the univariate analysis, this relationship was not significant in the multivariate analysis. Longer decision times are expected for manuscripts sent for external review, the major driving factor for MiSeRY. Interestingly, journal impact factor did not influence MiSeRY, possibly because of competing factors; while a higher

3 Multivariate analysis of predictors of MiSeRY*



* In each case adjusted for all other factors in the graph. Goodness of fit (Hosmer–Lemeshow): $P = 0.38$. ◆

4 Reported author sentiments reflecting the Kübler-Ross stages of grief

Stages of grief	Author sentiments
Denial	Maybe they sent me the wrong decision letter. I should check the submission website and email the Editor just in case.
Anger	How many more patients do you want?! Did Reviewer 2 even read the paper? Surely my paper is more important than that VADER study. ⁵
Bargaining	I wonder if I can re-format this as a research letter. Dear [insert deity of choice]. I know I haven't been to [insert relevant place of worship] recently, but could you get the Editors to change their mind?
Depression	Is it weird to be in the fetal position at work? Maybe I should just submit to that [insert journal with email that starts: "Greetings esteemed colleague ..."].
Acceptance	At least we've got some more data for the MiSeRY study. I re-formatted that in under an hour: a new personal best!
(We didn't know how to categorise this one)	I've had better hit rates on Tinder.

impact factor suggests higher stakes, it may be offset by the authors' tempered expectations.

Among the limitations to our study was the fact that it was performed at a single centre with academic physicians from a single specialty, perhaps causing selection bias. In particular, the sentiments in Box 4 may not be generalisable to other

researchers (particularly those not on Tinder). Further, all but one of the participants were also co-authors of this article, introducing the possibility for response bias. However, the potential predictors of MiSeRY were pre-specified, and self-experimentation is, in any case, sometimes necessary for advancing medicine.^{6,7}

Reports of the experience of grief may be affected by recall bias. Importantly, senior authors found it somewhat more difficult to recall rejections, while first authors had an uncanny ability to recall them all. Although our senior authors were older, we are (almost) certain that this difficulty with recall is attributable to their greater CaLM rather than to cognitive decline (but we did not undertake neurocognitive testing prior to participant enrolment).

Our statistical analysis assumed independence of events. Potentially important effects for nested data, including individual author traits, medical specialty (although we are confident that cardiologists are an accurate representation of the broader medical community), affiliated institution, and geographic location, could not be investigated. However, the findings of our pilot study could guide future larger scale studies.

Current interventions for MiSeRY are limited to satirical frivolity.⁸ Our findings are therefore potentially extremely important for mitigating MiSeRY and improving the mental wellbeing of medical authors. Some journals attempt to reduce author expectations by publishing their low acceptance rates, and judicious selection of manuscripts sent for external review may enhance this effect. Senior authors could also counsel first authors about enhancing CaLM.

Conclusion

To help put authors out of their MiSeRY, journal editors could be more selective in the manuscripts they send for external review, while first authors need to temper their expectations and master the CaLM of their senior colleagues. Larger scale studies validating and building upon these findings are required to fully appreciate the intricacies of MiSeRY and to develop therapeutic interventions. A prospective international registry may provide the necessary data and allow researchers to share in each other's MiSeRY.

Acknowledgements: We acknowledge the various medical journals that have rejected our manuscripts and provided inspiration for this study. To quote a contemporary poet: "thank u, next".

Competing interests: All but one of the rejected authors in this study are co-authors of this article. We are uncertain whether referencing Tinder or quoting Ariana Grande infringes any copyright laws. We have no other relevant disclosures. ■

© 2019 AMPCo Pty Ltd

- 1 Organisation for Economic Co-operation and Development. Education at a glance 2016: OECD indicators. Paris: OECD Publications, 2016. <https://doi.org/10.1787/eag-2016-en> (viewed Oct 2019).
- 2 Talley NJ, The MJA. 2017: the year in review, and looking forward to 2018. *Med J Aust* 2017; 207: 462–463. <https://www.mja.com.au/journal/2017/207/11/mja-2017-year-review-and-looking-forward-2018>
- 3 Kübler-Ross E. On death and dying. New York: Macmillan, 1969.
- 4 Ng WL. The five stages of grief towards accepting a rejection letter. *Med J Aust* 2017; 207: 498. <https://www.mja.com.au/journal/2017/207/11/five-stages-grief-towards-accepting-rejection-letter>
- 5 Ardalan ZSM, Vasudevan A, Hew S, et al. The Value of Audio Devices in the Endoscopy Room (VADER) study: a randomised controlled trial. *Med J Aust* 2015; 203: 472–475. <https://www.mja.com.au/journal/2015/203/11/value-audio-devices-endoscopy-room-vader-study-randomised-controlled-trial>
- 6 Warren JV. Fifty years of invasive cardiology: Werner Forssmann (1904–1979). *Am J Med* 1980; 69: 10–12.
- 7 Marshall BJ, Armstrong JA, McGeachie DB, Clancy RJ. Attempt to fulfil Koch's postulates for pyloric campylobacter. *Med J Aust* 1985; 142: 436–439.
- 8 Chapman C, Slade T. Rejection of rejection: a novel approach to overcoming barriers to publication. *BMJ* 2015; 351: h6326. ■