## PEER REVIEW HISTORY

BMJ Open publishes all reviews undertaken for accepted manuscripts. Reviewers are asked to complete a checklist review form (**http://bmjopen.bmj.com/site/about/resources/checklist.pdf**) and are provided with free text boxes to elaborate on their assessment. These free text comments are reproduced below.

## ARTICLE DETAILS

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| **TITLE (PROVISIONAL)** | Effects of Cosmetic and Other Camouflage Interventions on Appearance-related and Psychological Outcomes among Adults with Visible Differences in Appearance: A Systematic Review |
| **AUTHORS** | Gholizadeh, Shadi; Rice, Danielle; Carboni-Jiménez, Andrea; Kwakkenbos, Linda; Boruff, Jill; Krishnan, Ankur; Malcarne, Vanessa; Thombs, Brett |

## VERSION 1 – REVIEW

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| **REVIEWER** | Jessica Maskell<br>Gold Coast Hospital and Health Service<br>Gold Coast, Australia |
| **REVIEW RETURNED** | 04-May-2020 |

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| **GENERAL COMMENTS** | Dear Author<br>This is a well presented review, however I am curious to the decision to only include RCTS. Although they are the gold standard in scientific research, there are many other high quality research designs that are utilised in psychological research. To answer the overall research aim I wonder whether opening your systematic review to other methodologies may have been beneficial. I am aware of the number of these studies that have produced evidence that adds to our understanding of this area of research. I think this is particularly important in this area of research as it is a psychosocial area of research where participant experiences influence managing visible difference. This is a limitation to this review.<br>You are to be commended for including an advisory committee in this research.<br>In terms of limitations it may also be useful to consider inclusion of the wide range of differing measures and tools used in this area of research. There is not a range of standardised measures e.g., QoL measures tailored for this population, etc. This also makes it difficult to draw any conclusions or recommendations from the available research as many different psychological domains are being tested.<br>This is a well written manuscript however it falls short of a thorough representation of existing research as only included RCTs. This limitation should be addressed in the manuscript prior to publication.<br>Thanks for the opportunity to review. |

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| **REVIEWER** | Catrin Griffiths<br>University of the West of England, UK |
| **REVIEW RETURNED** | 05-May-2020 |

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| **GENERAL COMMENTS** | This is an excellent systematic review of the effects of cosmetic and other camouflage interventions on appearance related and psychological outcomes among adults with visible differences.<br><br>The findings are novel and are a substantial contribution to this field. The manuscript is written excellently to a high standard. The Template for Intervention Description and Replication (TIDieR) checklist, and the Cochrane risk of bias tool has been used to ensure that the systematic review has been conducted and reported to a high standard. |

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| **REVIEWER** | Feizi, Awat<br>IUMS |
| **REVIEW RETURNED** | 23-Aug-2020 |

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| **GENERAL COMMENTS** | Authors did a systematic review of evaluation the effects of non-surgical intervention of appearance-related outcomes, general psychological outcomes, and adverse effects in adults with visible differences.<br>Authors in major parts did and followed sound approach regarding a systematic review although some ambiguities are available about the definition of different outcomes that they have investigated. However, importantly my major concern is: based on honestly reported results indicating majority of included trials in this systematic review have major methodological defects, such as lack of between groups comparison as an essential approach for obtain reliable data on effectiveness, or high risk of bias, why authors did this review and what they want to transfer to the scientific society? As can be seen and, really, I did not find straightforward conclusions for clinical setting, to my view and with respect to the efforts of author, this review because based on included studies with major methodological flaws, does not transfer reliable and usable clinical conclusions and implication. In summary the included and available studies in this area of subjects are not reliable for conducting a systematic review on them, |

**VERSION 1 – AUTHOR RESPONSE**

PEER REVIEWER #1 COMMENTS

1. This is a well presented review, however I am curious to the decision to only include RCTS. Although they are the gold standard in scientific research, there are many other high quality research designs that are utilised in psychological research. To answer the overall research aim I wonder whether opening your systematic review to other methodologies may have been beneficial. I am aware of the number of these studies that have produced evidence that adds to our understanding of this area of research. I think this is particularly important in this area of research as it is a psychosocial area of research where participant experiences influence managing visible difference. This is a limitation to this review.

Please see our response to comment #4 from the editors. Our decision was consistent with recommendations in the Cochrane Handbook, which we have explained. It is also consistent with our aim of providing interpretable evidence to knowledge users or underlining an important gap in knowledge to encourage desperately needed high-quality trial research.

2. You are to be commended for including an advisory committee in this research.

We thank Reviewer #1 for recognizing this strength.

3. In terms of limitations it may also be useful to consider inclusion of the wide range of differing measures and tools used in this area of research. There is not a range of standardised measures e.g., QoL measures tailored for this population, etc. This also makes it difficult to draw any conclusions or recommendations from the available research as many different psychological domains are being tested.

We have added a limitation, as suggested (Page 19, Lines 20-23), "Fourth, even with better quality evidence, the inconsistency across studies in outcome domains and measures used to evaluate effects would make drawing conclusions difficult. Ideally, a core set of outcome domains and measures would be used consistently."

4. This is a well written manuscript however it falls short of a thorough representation of existing research as only included RCTs. This limitation should be addressed in the manuscript prior to publication.

Please see our response to comment #4 from the editors. We believe that our decision to require evidence from RCTs, given the high feasibility of conducting randomised trials in this field and the extreme risk of bias from the types of pre-post studies that are alternatively conducted, was a strength, not a limitation.

PEER REVIEWER #2 COMMENTS

1. This is an excellent systematic review of the effects of cosmetic and other camouflage interventions on appearance related and psychological outcomes among adults with visible differences

We thank Reviewer #2 for her appreciation of the rigour of our systematic review.

2. The findings are novel and are a substantial contribution to this field. The manuscript is written excellently to a high standard. The Template for Intervention Description and Replication (TIDieR) checklist, and the Cochrane risk of bias tool has been used to ensure that the systematic review has been conducted and reported to a high standard.

We thank Reviewer #2 for these positive comments. We also believe that our findings make an important contribution. People with visible appearance differences need solutions that are helpful, and they want to be steered away from solutions that are not helpful. We have attempted to assemble the kind of evidence that would answer these questions and to exclude evidence that confuses or misleads; this is critical if the field is to move towards conducting desperately needed, feasibly conducted random comparative trials.

PEER REVIEWER #3 COMMENTS

1. Authors did a systematic review of evaluation the effects of non-surgical intervention of appearance-related outcomes, general psychological outcomes, and adverse effects in adults with visible differences. Authors in major parts did and followed sound approach regarding a systematic review although some ambiguities are available about the definition of different outcomes that they have investigated. However, importantly my major concern is: based on

> honestly reported results indicating majority of included trials in this systematic review have major methodological defects, such as lack of between groups comparison as an essential approach for obtain reliable data on effectiveness, or high risk of bias, why authors did this review and what they want to transfer to the scientific society? As can be seen and, really, I did not find straightforward conclusions for clinical setting, to my view and with respect to the efforts of author, this review because based on included studies with major methodological flaws, does not transfer reliable and usable clinical conclusions and implication. In summary the included and available studies in this area of subjects are not reliable for conducting a systematic review on them,

We very much disagree with this assertion, which seems to suggest that systematic reviews should only be conducted and published once researchers have somehow pre-verified that there are high-quality trials to inform clear decisions on clinical practice. This is a view that is not shared by leading methodologists in evidence synthesis or developers of clinical guidelines who depend on access to complete and rigorous evidence syntheses; it does not consider ramifications of how this would affect the evidence base and our ability to use evidence to make decisions.

There are several important reasons why systematic reviews are done and ways in which they contribute to ensuring that we provide the best possible health care to the public. Among these reasons, rigorously conducted systematic reviews play a crucial role in identifying and outlining when existing evidence is insufficient, what improvements are needed in future research, and what clinicians can do in practice in the absence of good evidence. Matthias Egger and colleagues, in the first chapter of their classic text on systematic reviews (Systematic Reviews in Health Care: Meta-analysis in Context, Second Edition, 2001), describe this. Similarly, Peričić and Tanveer, in their article "Why systematic reviews matter", written as part of the Cochrane Collaboration International Mobility Program, describe one of the most important roles of systematic reviews as highlighting methodological concerns in existing studies that can be used to improve future research on the topic. Consistent with this, only a very small percentage of Cochrane systematic reviews support clinical intervention with no need for additional research, and almost half report that the evidence reviewed does not support a conclusion of net benefit or harm, typically due to the quality of available trials (see Boas et al., Journal of Evaluation in Clinical Practice, 2012). Indeed, the entire GRADE system for using systematic reviews to develop clinical guidelines is premised on the idea that many well-conducted and well-resourced systematic reviews need to be conducted but will not identify evidence of high enough quality to draw clear conclusions and that clinical guidance is still needed.

Our review was done carefully using rigorous methods. We followed standards articulated in the Cochrane Handbook and other key guidance. We delivered a high-caliber assessment of gaps and shortcomings in an area important to people living with visible differences. This will guide future researchers to improve future work in this area.

Although Reviewer #3 has suggested that clinicians can only use systematic reviews when included evidence is good, clinicians also need to know what to do when high-quality evidence is not available. Consistent with this, in the discussion section, we provided important insight on clinical decision making in the context of existing, generally poor-quality evidence in this area. We described how clinicians should engage patients in shared decision making, highlighting the lack of clear evidence of benefits and harms and weighing patient preferences, and we underlined key considerations.

Failure to publish systematic reviews because primary evidence is not of high quality would quickly lead to researchers synthesizing only high-quality evidence in order to be published. This would leave researchers and clinicians without any guidance in many areas of health care practice and policy. It would inevitably contribute to, rather than reduce, research waste, as poor-quality research would continue to be conducted without clear guidance on needed improvements. It would also result in

poorly informed clinical decision-making as clinicians either attempt to work without evidence or rely on poor-quality individual primary studies without understanding their limitations.