



# NIGERIAN JOURNAL OF PAEDIATRICS

VOLUME 53 | NUMBER 1 | JANUARY - MARCH 2026

<https://www.njpaediatrics.com>

PRINT: ISSN 0302-4660

ONLINE: ISSN 2814-2985

- REVIEW** **Beyond the Stethoscope: Humanising Child Health Through Qualitative Inquiry (A Translational Method Review)**  
Orimadegun Adebola E
- ORIGINAL RESEARCH** **HemoTypeSCTM Point-of-care Testing as a Screening Tool for Sickle Cell Disease among Newborns in Ile-Ife, Nigeria**  
Ologun Busayo G, Adegoke Samuel A, Ologun Moyinoluwa A, Adeodu Oluwagbemiga O
- Factors Associated with Delayed Presentation of Sick Neonates at a Nigerian Tertiary Facility**  
Taiwo Opeyemi D, Akindolire Abimbola E, Alao Michael B, Tongo Olukemi O
- Pattern of Malnutrition and the Associated Factors Among Primary School Pupils in Ikenne Local Government Area, Ogun State, Nigeria**  
Okoro Nnamdi E, Nwa Edidiong H, Ananaba Success, Obichere Kamsiyochukwu, Ikechukwu Ellen, Onugha Jessica, *et al.*
- Infant Skin-Related Practices Among Attendees of Maternal and Child Health Clinics in Jos, Nigeria: A Cross-Sectional Study**  
Adah Ruth, John Collins, Banwat Mathilda
- A Nine-Year Review of Clinical Presentations, Surgical Management and Outcomes of Hirschsprung's Disease in a Resource-Limited Setting**  
Akpanudo Emem I, Ituen Monday A, Akpaette Iniophon C, Emmanuel Eti-Inyene M, Eyo Aniekpeno E
- Sex- and Age-Related Differences in Electrocardiographic Parameters of Healthy Black Adolescents in Ido/Osi Local Government Area, Ekiti State, Nigeria**  
Okolugbo Julia C, Bamigboye-Taiwo Olukemi T, Okeniyi John AO, Ogunlade Oluwadare, Onyema Clifford E, Ajibola Inimfon A, *et al.*
- CASE REPORT** **Dexamethasone-Induced Bradycardia in a Nigerian Child: A Case Report**  
Adebayo Bosede E, Folayan Olumuyiwa S, Omotosho Olaniyi, Akindolire Abimbola E, Adeolu Augustine A
- Giant Mastocele in a Nigerian Neonate: A Case Report**  
Idemudia Ebenovbe, Ikhurionan Paul
- Nonsteroidal Anti-Inflammatory Drug-Induced Severe Upper Gastrointestinal Bleeding in an Infant: A Case Report**  
Evinson Tamaracbi D, Ogigbah Perebodo E, Diriyai Blessing G, Akinbami Felix O
- Severe Hyponatremia and Klebsiella pneumoniae Meningitis in a Severely Malnourished Infant: A Case Report**  
Ogundeyi Morufat M, Ehijie Akugbe U, Adebola Mukhtar B, Akinbode Saheed K, Oni Nathaniel O, Sobanke Nofisat M
- EDUCATIONAL SERIES** **SYNOPSIS: Managing Shock in Paediatrics: A Practical Clinical Review**  
Akindolire Abimbola E
- CLINICAL QUIZ** Oba-Daini Olubunmi O.

OFFICIAL JOURNAL OF THE PAEDIATRIC ASSOCIATION OF NIGERIA



Nigerian Journal of Paediatrics 2026 (March); Volume 53(1):91-97.

<https://dx.doi.org/10.63270/njp.v53i1.2000052>.

## Non-Steroidal Anti-Inflammatory Drug-Induced Severe Upper Gastrointestinal Bleeding in an Infant:

### A Case Report

Evinson Duoye T, Ogigbah Efetobore P, Diriyai Gesitari B, Akinbami Felix O

Department of Paediatrics, Niger Delta University Teaching Hospital, Okolobiri, Bayelsa State

#### Correspondence

Dr Evinson, Tamaraebi D. Department of Paediatrics, Niger Delta University Teaching Hospital, Okolobiri, Bayelsa State. E-mail: [douye19@gmail.com](mailto:douye19@gmail.com) ; ORCID – <https://orcid.org/0009-0009-7520-6701>.

#### Abstract

Severe upper gastrointestinal bleeding (UGIB) in children is a medical emergency that poses a challenge to the paediatrician. Severe UGIB following acute use of Nonsteroidal anti-inflammatory drugs (NSAIDs) is rare and can be life-threatening. This is a report of an 8-month-old male who presented with acute fever and vomiting of blood three hours before hospital presentation. He had earlier received NSAIDs (ibuprofen at 10mg/kg/dose). He subsequently had massive haematochezia within one hour of presentation. The packed cell volume drop exceeded 10% (27% to 16%) within 6 hours, accompanied by the development of a haemic murmur. Upper gastrointestinal endoscopy performed about 36 hours after presentation showed massive duodenal ulcers with multiple duodenal vessels oozing blood. The infant was successfully managed with multiple blood transfusions, omeprazole, tranexamic acid, antibiotics and multiple endoscopic haemostasis. This case illustrates the potential for severe upper gastrointestinal bleeding following the use of NSAIDs in infants. Caregivers should be educated on the dangers of self-medication with over-the-counter medications, especially NSAIDs.

**Keywords:** Cyclooxygenase, Duodenal ulcers, Endoscopic haemostasis, Haematochezia, Ibuprofen.

#### Introduction

Upper gastrointestinal bleeding (UGIB) is referred to as bleeding from a source between the oesophagus and proximal to the ligament of Treitz.<sup>1</sup> Upper gastrointestinal bleeding (UGIB) is uncommon in children, with an estimated reported incidence of 1–2/10,000 per year,<sup>2</sup> of which the majority are benign and self-limiting.<sup>3</sup> Severe UGIB is rare and may pose a challenge to paediatricians. The aetiologies of UGIB in paediatrics vary with age, from neonates to adolescents. The causes of UGIB in infants include reflux and erosive oesophagitis, stress ulcers, NSAID-induced ulcers, and erosive

gastritis.<sup>4</sup> The NSAIDs are over-the-counter medications that are commonly procured and used as antipyretics and analgesics. They decrease prostaglandin production, thereby increasing the risk of gastrointestinal mucosal injury and leading to ulcers in the stomach and duodenum, which can cause UGIB. The clinical features following UGIB include haematemesis, haematochezia, melaena, pallor, and abdominal pain, among others. This is to report a case of severe UGIB following NSAID (Ibuprofen) use.

# Non-steroidal Anti-Inflammatory Drug-Induced Severe Upper Gastrointestinal Bleeding in an Infant: A Case Report

## Case Presentation

An 8-month-old male child presented with fever of three days and vomiting of three hours duration. The fever was intermittent, transiently relieved by paracetamol, and, as the fever persisted, the mother procured oral ibuprofen from a drug vendor and administered 10mg/kg/dose every 12 hours, for a total of 3 doses. This was the first time of administering ibuprofen to the child. Three hours before the presentation, he developed haematemesis containing altered blood, and he had four episodes of such before admission. The volume of haematemesis ranged from about 50 to 150 ml per episode. There has been no previous episode of haematemesis, no prior history of bleeding disorders, or neonatal umbilical catheterisation. He was subsequently admitted into the Children's Emergency Ward of the Niger Delta University Teaching Hospital. Within one hour of presentation, the infant passed copious amounts of blood per rectum (Figure 1). He had about 15 episodes in 24 hours, with an estimated volume of 150 mL per episode. There was no history of contact with anyone with similar symptoms or someone with features suggestive of viral haemorrhagic fever. There were no similar symptoms in the siblings and close family members.

On examination, the infant was febrile with a body temperature of 38.1°C, severely pale and had inflamed tonsils. There was no evidence of skin bleeding, and the peripheral oxygen saturation was 100% on room air. Abdominal examination was unremarkable. He was tachycardic with a heart rate of 148 beats per minute, and he had a grade 2/6 haemic murmur. The blood pressure was 70/50 mmHg, and the respiratory rate was 48 breaths per minute.

The initial PCV was 27%, which quickly dropped to 16% within six hours following

haematochezia. The platelet count (480,000 cells/mm<sup>3</sup>) and bedside clotting time (11 minutes) were normal; the *H. pylori* test was negative, while the liver function test parameters were essentially normal. He received intravenous omeprazole, vitamin K, tranexamic acid, ceftriaxone, gentamicin, and metronidazole. A nasogastric tube was inserted to drain fresh blood (approximately 15 ml), and he was transfused seven times with fresh whole blood. An upper gastrointestinal endoscopy was performed about 36 hours after presentation, revealing widespread bleeding duodenal ulcers (Figure 2) with Forrest classification 1b (Table I).

**Table 1: Forrest classification**

Class	Endoscopic observation	Risk of Re-bleed
<b>Ia</b>	Active pulsatile bleed	High
<b>Ib</b>	Active non-pulsatile bleed	High
<b>IIa</b>	Nonbleeding visible vessel	High
<b>IIb</b>	Adherent clot	Intermediate
<b>IIc</b>	Ulcer with a black spot	Low
<b>III</b>	Clean, non-bleeding ulcer bed	Low

During endoscopy, a haemospray (TC-325) was used to secure haemostasis. Six hours after the procedure, the infant passed fresh blood *per rectum*; hence, a repeat endoscopy was done. At this stage, the parents were counselled for surgery in the event of a re-bleed (Figure 3). Over the next 48 hours, haematochezia reduced significantly with a predominance of altered blood, and the child showed marked improvement, as shown by stabilised vital signs and improved activity. Feeding was commenced by mouth, and he was discharged home in stable condition. Informed consent was obtained from the parents to use the data and images of the child in this research.

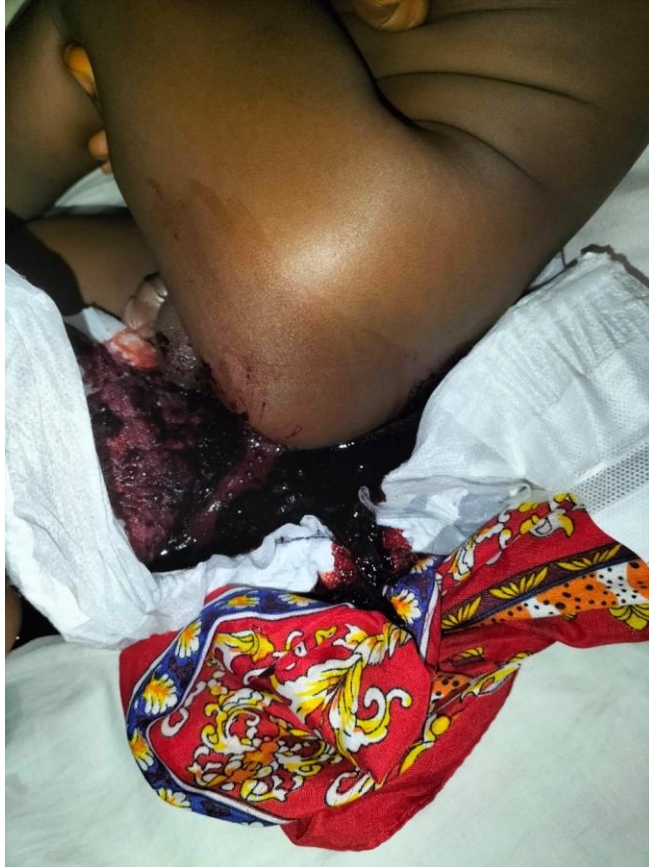


Figure 1: Copious bleeding per rectum

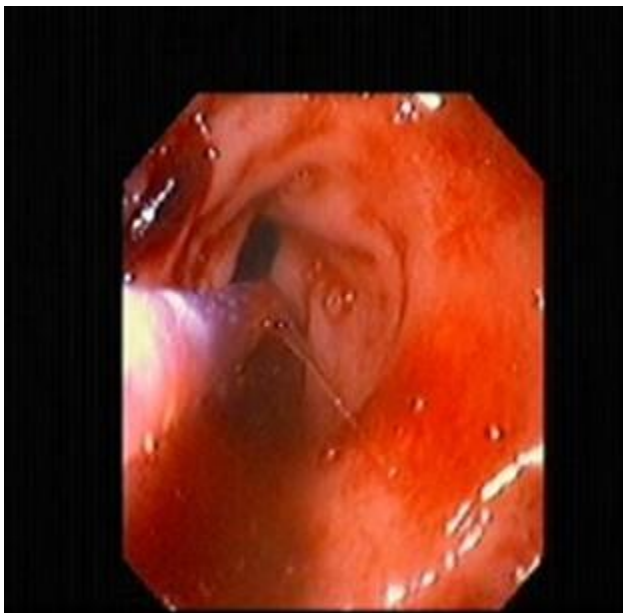
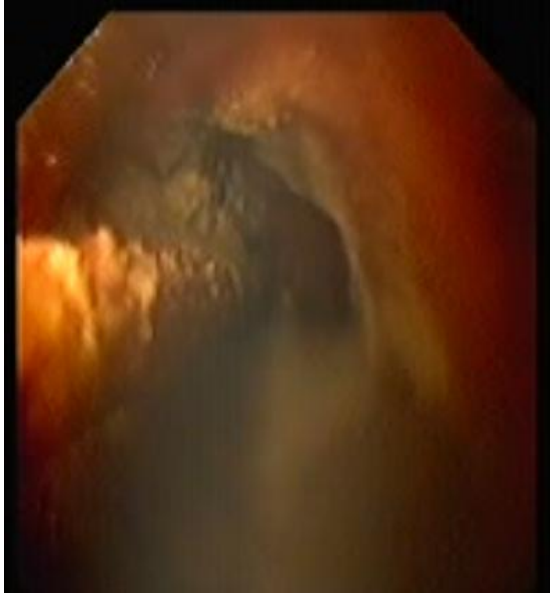


Figure 2: Bleeding duodenal ulcer seen on endoscopy

## Non-steroidal Anti-Inflammatory Drug-Induced Severe Upper Gastrointestinal Bleeding in an Infant: A Case Report



**Figure 3: Duodenum after application of haemospray**

### Discussion

Upper gastrointestinal bleeding (UGIB) is an uncommon but potentially life-threatening clinical condition in children.<sup>5</sup> In infancy, the most prevalent causes of UGIB are gastritis with subsequent mucosal bleeding, stress ulcers, caustic ingestions, foreign body ingestion, coagulation disorders, NSAID-induced bleeding and rarely peptic ulcers and oesophageal varices.<sup>4</sup> The risk factors for UGIB vary, but NSAID use and *Helicobacter pylori* infection should be considered in children with severe UGIB.<sup>5</sup> The observed risk of UGIB with NSAIDs is 7.2 per 100,000 based on a study of 55,785 American children.<sup>6</sup> The risk of developing UGIB with NSAID use is greater in the 2-month-old to 7-year-old group versus the 8- to 16-year-old group.<sup>7</sup>

Gastrointestinal injury is a significant side effect of using NSAIDs. These drugs are known to interfere with the protective mechanisms of the gastrointestinal tract, such as mucosal blood flow and mucus production. This interference compromises the mucosa's ability to resist or recover from injury.<sup>8</sup> The suppression of mucosal prostaglandin synthesis by the systemic inhibition of cyclooxygenase (COX) enzymes confers on NSAIDs their ability to injure the GI

mucosa.<sup>8</sup> Systemic inhibition of COX-1 is believed to lead to the release of endothelin-1, a potent vasoconstrictor, which may induce mucosal injury by the reduction of blood flow. Sustained vasoconstriction worsens mucosal injuries, causing extensive haemorrhage.<sup>9</sup>

In low technology settings, including Nigeria, NSAIDs are easily accessible over-the-counter medications that are commonly used for their antipyretic and analgesic properties. The index infant was given ibuprofen syrup to manage fever before the onset of bleeding. Studies have shown a clear trend in an increasing risk for upper GI bleeding with increasing doses of ibuprofen and naproxen.<sup>10</sup>

*Helicobacter pylori* has been found in up to 49% (41 of 84) of children presenting with UGIB.<sup>11</sup> This infection represents an important risk factor, especially in children with hereditary haemorrhagic disorders such as haemophilia.<sup>11,12</sup> *Helicobacter pylori* testing was negative for the index case, and there was no history suggestive of a bleeding disorder.

Defining the amount of bleeding and any associated symptoms is important. Older children can report symptoms like abdominal pain, dizziness, and palpitations. Other clinical features

that increase suspicion of UGIB include melena, bright red blood per rectum, or hematemesis;<sup>13</sup> these symptoms were present in our patient. Maroon stools or frank blood in the rectum may signal rapid UGIB<sup>14</sup>, as seen in our patient.

A thorough review of the patient's medications should be performed, with particular attention to those that may increase the risk of UGIB, such as NSAIDs, corticosteroids, and selective serotonin reuptake inhibitors (SSRIs).<sup>13</sup> Airway, breathing and circulation should be assessed with emphasis on evaluation of hemodynamic stability. Tachycardia is the most sensitive indicator for blood loss in children<sup>15</sup> as seen in the index case. Pallor may indicate severe blood loss, but may not be present in an acute UGIB. The evaluation should also include a rectal examination to identify the presence of haemorrhoids or fissures that may indicate lower gastrointestinal bleeding (LGIB), and a stool sample should be obtained for occult blood testing when there is no obvious haematochezia.<sup>16</sup> Blood samples should be taken for haematocrit, haemoglobin, grouping and crossmatch, blood urea nitrogen, creatinine, coagulation profile and liver enzymes.<sup>15</sup> Urgent endoscopy, which is best performed within 12 hours after admission, is indicated for severe haemorrhage that requires transfusion or for hemodynamic instability; otherwise, endoscopy can be performed within the first 24 hours of admission.<sup>15</sup> The index patient met the criteria for an urgent endoscopy; however, logistical challenges in transferring the patient to the endoscopy facility caused delays, resulting in the procedure being performed approximately 30 hours after admission. The upper GI endoscopy done for our patient revealed widespread bleeding duodenal ulcers with Forrest classification 1b. The Forrest classification<sup>17</sup> is a tool used to classify the lesion and the risk of re-bleeding in endoscopy (Table I). A repeat endoscopy in children with life-threatening UGIB should be considered within 48-72 hours

after the initial endoscopy.<sup>18</sup> Unfortunately, this was not done in the index case, due to cost.

Patients with active bleeding that leads to hemodynamic compromise, as seen in the index case, require intravenous access for fluid resuscitation and transfusion for patients with haemoglobin <8g/dl, as well as cardiopulmonary and urine output monitoring.<sup>15</sup> Consideration of the commencement of a proton pump inhibitor, or a H2 receptor blocker, in all children with UGIB is reasonable.<sup>15</sup> Studies have also shown that the use of tranexamic acid appears to have a beneficial effect in terms of decreasing the risk of re-bleeding, the need for surgery, and mortality in patients with UGIB.<sup>19</sup> The index patient received omeprazole and tranexamic acid.

A multidisciplinary team in a tertiary care centre is important in the management of children with UGIB. Consultation with paediatric intensivists, gastroenterologists, anaesthesiologists, and surgeons may be required for patients with life-threatening bleeding.<sup>13</sup> Endoscopic treatments for UGIB include the application of clips, coagulation, banding, injection, sclerotherapy, and the use of tissue adhesives.<sup>15</sup> A coagulant in the form of a haemospray (TC-325) was used to achieve haemostasis in the index case. The reported efficacy of endoscopy for controlling UGIB is approximately 90%.<sup>18</sup> A paediatric interventional radiologist is needed if angiography is indicated when endoscopic therapy is unsuccessful.<sup>18</sup> Children with bleeding that is not controlled with endoscopic or angiographic interventions should be evaluated for surgery.<sup>18</sup> In children with severe peptic ulcer bleeding, follow-up endoscopy may be considered within four to six weeks to assess ulcer healing.<sup>15</sup>

## Conclusion

Severe UGIB following acute use of NSAIDs is rare but can be life-threatening in children. A high

## Non-steroidal Anti-Inflammatory Drug-Induced Severe Upper Gastrointestinal Bleeding in an Infant: A Case Report

index of suspicion should be adopted in the evaluation of any child with gastrointestinal bleeding. Timely interventions, like blood transfusion and endoscopy, are necessary for treatment and reduction of morbidity and mortality associated with severe UGIB. It is crucial to routinely educate caregivers on the potential dangers of self-medication and indiscriminate use of over-the-counter medications, particularly NSAIDs.

**Acknowledgement:** The authors appreciate the parents of the child for granting permission to utilise the child's data in this publication.

**Authors' Contributions:** All the authors participated in the conception of the study. ETD, OPE, and DBG drafted the manuscript, and AFO revised it for sound intellectual content. All the authors approved the final draft of the manuscript.

**Conflicts of Interest:** None declared.

**Funding Support:** The authors did not receive any financial support for the research or the preparation of the manuscript.

**Accepted for publication:** 25<sup>th</sup> March 2026.

### References

1. Sur LM, Armat I, Sur G, Tisa I, Bordea M, Lupan I, *et al.* Practical Aspects of Upper Gastrointestinal Bleeding in Children. *J Clin Med* 2023;12(8):2921.
2. Yu Y, Wang B, Yuan L, Yang H, Wang X, Xiao Y, *et al.* Upper Gastrointestinal Bleeding in Chinese Children. *Clin Pediatr (Phila)* 2016;55(9):838–43.
3. Nasher O, Devadason D, Stewart RJ. Upper gastrointestinal bleeding in children: A tertiary United Kingdom children's hospital experience. *Children* 2017;4(11):95.
4. Kocic M, Prokic D, Kitic I, Rasic P, Savic D, Milickovic M, *et al.* Age-specific causes of upper gastrointestinal bleeding in children. *World J Gastroenterol* 2023;26(47):6095–110.
5. Owensby S, Taylor K, Wilkins T. Diagnosis and management of upper gastrointestinal bleeding in children. *J Am Board Fam Med* 2015;28(1):134–45.
6. Lesko SM, Mitchell AA. An Assessment of the Safety of Pediatric Ibuprofen A Practitioner-Based Randomized Clinical Trial. *JAMA* 1995;273(12):929–33
7. Grimaldi-Bensouda L, Abenhaim L, Michaud L, Mouterde O, Jonville-Béra AP, Giraudeau B, *et al.* Clinical features and risk factors for upper gastrointestinal bleeding in children: a case-crossover study. *Eur J Clin Pharmacol* 2010;66(8):831–7.
8. Lanas A. Role of nitric oxide in the gastrointestinal tract. *Arthritis Res Ther* 2008;10 Suppl: S4.
9. Wallace JL. Prostaglandins, NSAIDs, and Gastric Mucosal Protection: Why Doesn't the Stomach Digest Itself? *Physiol Rev* 2008;88(4):1547–65.
10. Mellekjær L, Blot WJ, Sørensen HT, Thomassen L, McLaughlin JK, Nielsen GL, *et al.* Upper gastrointestinal bleeding among users of NSAIDs: A population-based cohort study in Denmark. *Br J Clin Pharmacol* 2002;53(2):173–81.
11. Boukthir S, Mazigh SM, Kaach N, Bouyahya O, Sammoud A. The effect of nonsteroidal anti-inflammatory drugs and Helicobacter pylori infection on the gastric mucosa in children with upper gastrointestinal bleeding. *Pediatr Surg Int* 2010;26(2):227–30.
12. Dolatkah R, Khoshbaten M, Asvadi Kermani I, Reza Bonyadi M, Ghojzadeh M, Sanaat Z, *et al.* Upper gastrointestinal bleedings in patients with hereditary coagulation disorders in Northwest of Iran: Prevalence of Helicobacter pylori infection. *Eur J Gastroenterol Hepatol* 2011;23(12):1172–7.
13. Boyle JT. Gastrointestinal Bleeding in Infants and Children. *Pediatr Rev* 2008;29(2):39–52.
14. Bhatia V, Lodha R. Upper gastrointestinal bleeding. *Indian J Pediatr* 2011;78(2):227–33.
15. Colle I, Wilmer A, Moine O Le, Debruyne R, Delwaide J, Dhondt E, Macken E, *et al.* Upper gastrointestinal tract bleeding management: Belgian guidelines for adults and children. *Acta Gastroenterol Belg* 2011;74(1):45–66.

16. Wilkins T, Schade RR. Diagnosis and Management of Upper Gastrointestinal Bleeding. *Am Fam Physician* 2012;85(5):469-76.
17. Forrest JA, Finlayson ND, Shearman DJ. Endoscopy in gastrointestinal bleeding. *Lancet* 1974;2(7877):394-7.
18. Fox VL. Gastrointestinal bleeding in infancy and childhood. *Gastroenterol Clin North Am* 2000;29(1):37-66.
19. Burke E, Harkins P, Ahmed I. Is There a Role for Tranexamic Acid in Upper GI Bleeding? A Systematic Review and Meta-Analysis. *Surg Res Pract* 2021;2021:1–12.